



N. J. COLMAN, EDITOR AND PUBLISHER,  
Saint Louis, Missouri.

H. P. BYRAM, EDITOR AND PUBLISHER,  
Louisville, Kentucky.

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#### AGRONOMY;

OR THE SCIENCE WHICH RELATES TO THE CON-  
STITUENT PARTS AND PHYSICAL PROPER-  
TIES OF THE SOIL, &c.—NO. 3.

#### CLAY.

Clay, as we have already observed, is a compound of silica and alumina. These two earths are not merely mingled together in it, as is generally supposed, but chemically combined. A large proportion of the clay found in its natural state is also mixed with an extra quantity of silica, which exists in it in the form of sand of various degrees of fineness. Clay not only differs in appearance both from silica and alumina, but even its properties do not correspond in that degree which might be expected from the proportion in which these two substances are united in it.

Clay always contains iron in a higher or lower state of oxydation, and it is probable that this metal constitutes an essential part of it. Oxyde of iron is formed by the union of the metal with oxygen, and this combination is easily affected by the action of moisture. The colors of the oxyde vary, according to the degree of oxydation, from black to yellow, brown and red.

Iron is sometimes operated upon in the ground

by an acid, generally by carbonic acid, which, with it, forms an insoluble compound wholly devoid of taste and indifferent if not useful to vegetation.

Oxyde of iron is sometimes combined with phosphoric acid, especially in marshes, where that acid is produced by the decomposition of original bodies. This compound is equally insoluble with the last, but it is nevertheless thought to be injurious to vegetation.

When iron is combined in the soil with sulphuric acid, produced by the decomposition of iron-pyrites, it forms the neutral salts commonly called "green vitriol." This salt, when mixed in a very small proportion of clay, appears always to exert an injurious action upon vegetation; indeed, sulphuric acid has never been found favorable to vegetation except upon calcareous soils, in which the acid immediately combines with the lime, and thus forms gypsum, instead of being united with iron.

It is only when combined with vegetable mould or other substances containing large quantities of carbon, and even then used in very small quantities, that the sulphate of iron (green vitriol) has produced a fertilizing effect, or any great improvement in the soil.

Clay has probably been formed by the decomposition of hard rocks or stones. Many compact minerals, composed of alumina, silica, and oxyde of iron, are decomposed by the action of the atmosphere and transformed into clay.

Clay formed by this insensible operation of nature, was, probably in former ages, displaced by the action of running water, and deposited in the plains as we see it at present. Besides, it has, according to all appearance, attracted certain substances from the atmosphere, particularly oxygen.

The three substances of which clay is chiefly

composed, viz: alumina, silica, and oxyde of iron, are united in it in very different proportions, and it is seldom that two kinds of clay are found of exactly the same composition. In most cases, silica is the predominating ingredient, the quantity of this substance frequently amounts to 93 parts in 100, without the mixture losing the properties of clay. Alumina rarely forms a principal component part. Among the properties of clay, none are so remarkable as their relations to water. When in a state of comparative dryness, although not absolutely free from moisture, it absorbs water with facility, and when it contains a considerable quantity of that fluid, it forms a more or less tenacious, adhesive and ductile mass, which easily takes and retains any impression that may be given it, and is therefore capable of being moulded into all sorts of shapes.

Clay, when saturated with water, is no longer pervious to that fluid. When water is poured upon a cake or basin made with clay paste, it remains on the surface without filtering through it. This faculty imparts great importance to the presence of clay in the upper stratum of the soil and even to those which are underneath. It is the clay thus saturated which prevents water from penetrating to a greater depth. Were it not for this stoppage we should not meet with any spring without boring down to the solid rock. These beds of clay, alternating with stratas of earth permeable to water, are the most ordinary source of springs, because the water retained by them can only force a passage for itself in a direction parallel with them.—These beds are also the cause of those swamps, or collections of stagnant water, which are sometimes met with in fields and plains, the water not being able to penetrate into the earth, remains on the top of the clay strata until it is thoroughly evaporated.

Generally speaking, air appears to exercise a very powerful influence on clay, whether baked or unbaked. This action is peculiarly apparent in the beneficial effect produced upon land, by clay which has been exposed to the air for a long time. It is generally known that the earth of old walls forms an excellent manure and increases the fertility of the soil.

It was formerly thought that clay absorbed the nitre contained in the air. It has indeed, been ascertained that it favors the formation of the nitrate of potassa in salt-petre houses; but the air never contains nitre ready formed. Various observations and experiments, however, tend to induce the belief that clay, when exposed to the air, absorbs nitrogen, hydrogen and all

the animal exhalations contained in the atmosphere. When kneaded clay is exposed for a considerable period in large masses and in a damp situation, it assumes all the character of putrefaction. Ammonia is then formed in it, thus proving the presence of nitrogen, which is a constituent portion of ammonia.

Clay exists in great varieties and is known under different names, according to the use to which they are applied in the arts. To describe these would be more interesting to the manufacturer than to the farmer.

#### ADVANTAGES OF A THOROUGHLY PULVERIZED SOIL.

Some of the most intelligent and learned cultivators in England have long contended that if the soil was kept well and thoroughly pulverized the land would continue to yield undiminished crops; and the result of some of the repeated experiments there, would seem to go far to favor such a conclusion. But notwithstanding, after continuing to cultivate the same land every year for eight or ten years in the same crop (wheat) the fallacy of this conclusion began to be manifest.

If in preparing the land for a crop, the particles of soil are thoroughly divided and pulverized to the full depth required by the roots of the plants to be grown, every particle of the soil is open for the free penetration of the roots, and if it be a hoed crop, and the surface be kept mellow throughout the growing season, the soil, if of only moderate fertility, will no doubt continue to yield good crops for a number of years, because the thorough preparation of the soil has rendered available to the crop every particle of fertilizing matter it contained; but finally the store would become exhausted and the land would cease to be productive.

But one of the greatest benefits to be derived by the American cultivator from thoroughly pulverizing the soil, is that it proves the only available remedy against drouth. Of late years much has been written upon this subject, with the view to illustrate its advantages.

In a late number of the *Southern Cultivator*, a correspondent gives the details of several experiments he had made with the view to prove the advantages of "stirring the earth" as a protection against drouth. In preparing for the experiment the writer constructed a balance, or scales, so delicately adjusted that the smallest weight would turn them. With this balance the following experiments were conducted:

"Experiment 1st. I suspended from each end of the beam tin buckets 7 inches deep, 5

inches in diameter and counterpoised them. I then took them to the spot from whence I meant to procure the earth. The earth was in just such a state of moisture as we consider favorable for sowing small seeds. I removed about three inches depth of earth, and then began to fill the vessels, which I did by taking it all from one hole, and putting it into the buckets about a half a handful alternately into each, until they were nearly filled. I subsequently reduced the quantity in each to 7 pounds. My comparisons were to be direct, i. e., between the buckets (along with their contents) without the intervention of weights, which from this time, through all the experiments, were employed only to restore the equilibrium whenever disturbed. The buckets were therefore kept suspended on the beam. The whole was placed in a situation exposed to the sun and air and dews. At the time of counterpoising the portions of earth, I put into each bucket an iron stirrer. These were simply two large nails selected with reference to equality of weight. The stirrers were always left in the buckets, so as to guard against the removal of the smallest portion of earth. The buckets were left in one condition (neither being disturbed) for twenty-four hours. At the end of this time they were still in equilibrium. Being thus satisfied of the similarity of the circumstances, I commenced stirring (plowing) the earth in one of them. The atmosphere was very humid, and the portions of earth, balance, stand &c., were frequently taken in to avoid the rain falling into them. *While this moist condition of the atmosphere lasted, the stirred earth gained daily in weight.* But a change came on almost imperceptibly, as the atmosphere became dryer; and on the fourth day, the gain was lost again, and the equilibrium restored. I continued to stir the same portion until it was a *decided loser*, the sun being bright in the day and the dews heavy at night. There was one morning after a very heavy dew, when the gain was so perceptible, that I found by restoring the equilibrium, that it was five grains. And this was not equal to half the loss of the day before. Several times during the experiments, there was no perceptible difference between the indications in the morning and those in the evening.

"*Experiment 2d.*—I stirred the other bucket (now the heavier) leaving the first undisturbed. *It lost very rapidly. It became the lighter one in the course of the day.*

"*Conclusion* from these experiments: When the atmosphere is in a certain state of humidity, the pulverized earth absorbs moisture. When the atmosphere reaches a certain state of dry-

ness, the stirred earth gives off its moisture. I think my experiments with their variations, do most clearly establish as a fact, that the atmosphere does reach such a state of dryness that the plowing of the ground may cause it to lose more moisture than it gains. And my observation of the weather during my experiments satisfies me that such a state of the atmosphere is by no means unusual."

Those who take but a superficial view of these experiments may be a little surprised at the result, but it is just what we should expect, and proves nothing against the advantages claimed by those who advocate stirring the soil as a remedy against drouth.

The moisture that is secured to the roots of growing plants, as the result of pulverizing the soil, is derived from *two sources*, viz: from the dews and atmosphere, particularly in the night, by condensation and absorption in consequence of the temperature of the earth being lower than that of the surrounding atmosphere; and from the store of water contained in the earth below, which is rendered available in a very great degree by capillary attraction.

Now the experiments referred to above, although they appear to have been conducted with a great deal of care and accuracy, were not so carried out as to secure a full supply of moisture from either of these sources.

In the first place, the buckets containing the moist earth, were suspended in the atmosphere entirely isolated and cut off from the main body of the earth below, and subject to the same temperature as the surrounding atmosphere; whereas the temperature of the earth we cultivate, in dry, hot weather, is generally many degrees lower than the surrounding atmosphere, and the atmosphere at the times of the greatest drouth in summer always contains the largest amount of moisture, in the form of aqueous vapor. If the ground in the spring is first broken up and pulverized to the proper depth, say 8, 10 or 12 inches, (according to the depth of soil) and the *crust broken* and the *surface kept mellow after every rain in summer*, it is then in a condition to absorb the evening dews as they fall, and owing to the lower temperature of the earth and the open and porous condition of its surface, the atmosphere circulates freely through it and is condensed and deposits a large amount of moisture among its particles. Where the proper care and precaution are taken to render these supplies available in their fullest extent, most summer crops may be matured with a small amount of rain. But as the experiments were conducted, the temperature in the earth in

the buckets and the surrounding atmosphere being so nearly equal that but little moisture was derived either from the dews or atmosphere, and suspended as the buckets were, the stirring that the earth received, was calculated to dissipate more rapidly what moisture it contained. Indeed, the course pursued in stirring the earth in the bucket is what would be advised, if the object sought was to dry the earth, or any other similar substance, in the least possible time. But in conducting these experiments the greatest supply of moisture was cut off which would have been derived from the surrounding earth below. When the soil is properly broken up and pulverized, its particles are brought to a condition similar to that of a *moistened sponge*. It is well known that if we bring the point of a moistened sponge in contact with a body of water, the water will ascend until the whole piece is filled to saturation. When the soil is broken up and thoroughly pulverized, its particles are brought into a condition similar to that of a moistened sponge and the moisture from below, if the particles are brought to a proper condition by breaking the crust and stirring the surface after every rain, will continue to ascend just as in the case of the sponge.

In order to meet this condition in conducting the experiments referred to, holes three quarters of an inch in diameter were made in the bottom of the buckets, into which pieces of candle-wick of equal length and quantity were inserted and which were brought in contact with water below. But this part of the experiment was so imperfect, compared with the condition of earth prepared and treated as it always should be, for a crop, that we consider that it proved nothing.

The repeated stirring or cultivating the soil, in dry weather, when mellow and free from weeds, is injurious rather than beneficial. Any farmer who has paid attention to the subject, has noticed that when one part of a piece of ground or garden has received a thorough stirring with the cultivator after a beating rain, and another part has been left with the crust unbroken through a dry spell, that the part that has been cultivated and the surface made mellow will remain moist for a long time, even to within an inch of the surface, while that part which is left unbroken after the rain, has parted with all its moisture for a foot or more in depth.

When dry weather is expected, after a heavy rain, it is important as soon as the ground is sufficiently dry to work, to start the plows and cultivators into every growing crop requiring work, and if dry weather follows, the working need not be repeated oftener than once in 8, 10 or

14 days. Different soils require more or less working, according to the amount of clay or sand they contain. A clayey soil requires more labor in pulverizing to keep it in a proper condition to absorb moisture than a soil composed more largely of sand.

The greatest benefit is derived by that part of the land which is freshly worked in the evening owing to the moist surface being in a better condition to absorb the dew and moisture from the atmosphere, than when the surface has become dry by longer exposure to the sun.

#### FOREIGN CROPS.

By the latest arrivals we get news from Europe of a generally good harvest. Some kinds of produce had been injured by heavy rains. In England the crops were all harvested and were abundant. The potato crop had been injured by heavy rains. In France throughout the country the prospects were good, notwithstanding the inundations in some districts. In Spain the crops presented a fair promise. In Portugal they had suffered from too much rain. In Prussia there is more than an average crop. We presume that the intervening and surrounding countries about equal those mentioned. It appears that while we have suffered from drought, all Europe has had too much rain. Is there any philosophical connexion between the rain of Europe and the drought of this country? Is it not a law that about the same quantity of rain falls upon the earth's surface every year, and that when one place or region gets more than its proper share, another gets less? The evaporating surface is always the same. The heat from the sun and the central heat taking the whole earth's surface are always the same. Why should not the fall of rain be the same? Local causes might operate to disperse clouds in one region and concentrate them in another, and thus cause inundations in some places and droughts in others. If this is true we may expect that the crops the world over will average about the same every year. Considering the facilities for exchange of produce between countries, we have no occasion to fear a famine in any civilized country. The nations have become a brotherhood and will readily supply each other where a deficiency occurs in any one. Thanks to commerce; thanks to the genius and industry of man; thanks to the spirit of the age; thanks to all the means of enlightenment; especial thanks to the giver of all good for this great fraternity of nations. May they study the arts of peace and beat their swords and spears into plowshares and pruning hooks. \*



### FERTILIZING.

In England and the older States, fertilization is one of the great objects of the farmer. How best to fertilize his soil is the great question.—The virgin soil is worn out. Some of the elements necessary to the production of the grains, grasses and roots are exhausted. They must be supplied or the soil is good for nothing. In the older agricultural districts of every country, this is the case. It has been occasioned by bad farming. The soil has been annually taxed till, like a jaded horse, it has no more strength. It has been made to produce all it would, and all it has produced has been taken off and nothing returned to it till it can produce no more. It has given till it has nothing more to give. And so it will be in the fertile West if care is not early taken to replenish the treasures of the generous soil. No soil will hold out always. All soils are like human treasures, they have bottoms. The best prairie soil has its limit of power. And when that power is all exhausted, it can do no more. The farmers in the older States once thought their farms would always last. So now think the Western farmers, but experience will repeat the lesson learned in the older States. Now is the time for us to anticipate that lesson. The exhausting process is going on. Now is the time to check it. It is far easier to manure with the rough produce of the soil and barn, than in after years to purchase guano and other expensive manures. It is easier to keep the soil in good plight than to resuscitate it after it has been exhausted. The straw, waste hay and barn manure if properly preserved and applied from year to year with good cultivation, will preserve the energies of the soil. It is real cause of lamentation to see how western farmers are taxing without replenishing their soils. Year after year the same crop is reared on the same soil and all taken off. The straw and stalks are burned or otherwise disposed of as best they can be. The barns or stables have heaps of manure about them left there to bleach and waste in the sun and rain. Nothing is plowed under that can be got off. Nothing is permitted to go into the soil that can be taken away from it. This system of farming will by and by wear out the best farms. Their treasures are not inexhaustible. But aside from the certainty of exhaustion which will come sooner or later, it is a matter of importance to secure the very best crops now. There are very few soils that are not better for manuring. On almost every farm there are fields or pieces, that would be better for manuring. Let them have what they need. They will pay it back

with interest. Farms should be improved rather than deteriorated. The farmer who exhausts his soil is not a good farmer. The system of farming which tends to impoverish the soil is a bad one. "Keep up the farm," should be the motto. Let the Western farmers take heed in season.

### RYE---ITS CULTURE AND ITS USES.

In the great West, where wheat is so easily grown it is not expected that rye, as a bread material, will be extensively cultivated—wheat being more palatable—although we believe rye is the most healthy. But there are many other uses upon the farm to which rye can be profitably employed, and on many farms there are instances in which it is *indispensable* to good farming.

We regard it as an established fact, that no land, and particularly in a rolling country, from which hoed crops such as corn and potatoes have been taken, should be left unbroken and naked *during the winter*, because it is liable to injury and waste from washing rains, and the surface will become packed and hard and in the worst condition to be broken up and pulverized for a spring crop. When such lands are not sown with wheat or other winter grain, they should always be sown with rye; this can be turned to good account in various ways, without the loss of the land for other spring crops. If the land is in corn the rye may be sown and covered with the cultivator or plow, as soon as the ground is sufficiently wet after the corn is so far matured as to be partially glazed. If it is to be sown where potatoes were grown, the rye should be put in immediately after digging the potatoes in August or early in September. Sown after either of these crops it will generally cover the ground completely before winter with an abundant growth of herbage, affording rich pasturage during winter and early spring for all kinds of farm stock. In addition to this, the land is protected from waste by repeated freezing and thawing, and by the washing rains of winter; and when the rye is plowed under, the blades and numerous roots afford an amount of vegetable matter for the improvement of the soil equal to a heavy coat of manure, and the land when broken up will be in the most light and mellow condition for the succeeding crop through the entire season.—This method, in addition to the use of clover in regular rotation, is the cheapest that can be adopted for the protection and improvement of the soil, and the opportunity to thus employ it should never be lost, especially where so little

regard as at present is paid to husbanding and applying the manures that can so easily be made on every farm.

This method of sowing rye is particularly valuable and important in the south and other countries where the common grasses do not flourish so well.

Hemp, unlike most other crops, may be allowed to follow consecutively, for several years upon the same land with less exhausting effects upon the soil, than almost any other crop; and as hemp is usually cut early in the season, rye may be sown with the most beneficial effect upon the soil, restoring in a great degree the loss occasioned by the hemp, and leaving the soil in the best possible condition for the succeeding crop of hemp the following spring. This will afford a large amount of pasture, besides leaving a heavy dressing to be turned under in the form of manure.

#### VARIETIES.

We know of three varieties of rye now cultivated in the United States, viz: the *common*, the *White* and the *Multicole*. The common is well known; we have not now at hand any account of the history or origin of the *White*; the flour made from it is said to be nearly as white as that from wheat, and makes a bread that is sweet, nutritious and highly prized. The *Multicole* derives its name from its tendency to "tiller" or spread and send up a large number of stems from one grain. It was introduced into the West by Mr. Arthur Peter, of Jefferson county Kentucky, he having received a small quantity of it in a letter, a few years ago, from Virginia. It is now extensively grown in that part of the State, and from its tendency to spread affords a much more abundant pasturage than the common rye. The seed is too frequently injured by allowing stock to feed it off too late after it has jointed in the spring. A half bushel of seed of this variety to the acre, if on good land and well put in, is sufficient, which is but half the quantity usually sown of the common kind.

Rye is extensively grown in some parts of the West for grain, where wheat does not thrive so well. It affords excellent early feed for hogs before the oat crop is sufficiently advanced to turn them upon. To this method of feeding rye there is however, one objection—the "spurred" or blasted grains are poisonous to animals, and where it is abundant, sometimes proves fatal to the hogs that are confined to it.

Rye, when ground with an equal amount of corn and mixed with cut hay or straw, affords excellent feed for work horses—better than any other grain alone. It is to this kind of feed that the superior appearance and condition of the horses of German farmers of Pennsylvania are indebted. It is more profitable to the farmer and better for the country to be used in this way, than to be sold for distillation, as much of it is, particularly when the corn crop is short.

#### PROPAGATION AND DOMESTICATION OF FISH—VISIT TO DRs. GARLICK & ACKLEY'S FISH NURSERY, NEAR CLEVELAND, OHIO.

The artificial reproduction and cultivation of fish have, for some time, been practiced in parts of Europe. In France it is now carried on to considerable extent, and the produce of some of the streams and ponds yields large profits. The subject is now attracting some attention in the United States. The New York State Agricultural Society, in their last premium list have offered a prize of \$100 for the best Essay on the "Production and Preservation of Domestic Fish for Ponds."

Drs. Garlick and Ackley, known as distinguished surgeons, of Cleveland, Ohio, are the first we believe, to introduce the artificial spawning and domestication of fish in the United States. Dr. Garlick being an enthusiastic amateur in this line commenced the business in connection with his associate, Dr. Ackley, upon the farm of the latter, two or three years ago. They made several trips to lake Superior and Fort Stanley in Canada, to procure trout for stocking their streams, and in every instance were perfectly successful, except the first, when they lost a large number of fish in transportation. After this, by personal attention, they found that by reducing the temperature of the water in the vessels containing the fish, to 32 degrees, by the application of ice, the respiration and circulation in the fish was so reduced that they experienced no difficulty in transporting them any distance with perfect success. In this way they have procured at different times, 150 full grown trout.

Feeling an interest in the success of this enterprise, and while visiting Cleveland a short time since, we called on Drs. Garlick & Ackley, who very kindly conveyed us to the farm and fish nursery, situated about three miles from the city. The farm contains about 100 acres. Through the timbered portion of it runs a ravine, abundantly supplied with never-failing springs of water.—Across this ravine, dams have been built so as to form three ponds, connected by sluiceways between. In the upper pond are the young trout, confined by netting across the sluice.—The second pond is designed for the fish two years old, and the lower one for the fish after they have become so large as to be able to protect themselves from the voracious appetites of the older fish of their race.

At the head of a large spring and near the upper pond is situated the hatching house. In this house is a tank four feet wide by eight feet long and two feet deep. The water is received

from the spring into this tank and is discharged from a pipe near the top into the hatching boxes, ten in number, and so arranged that the first is higher in the range than the last, so that there is a constant stream of water passing from the tank above through the ten hatching boxes. In this tank we saw the old *pet* fish "Naiad Queen," the prolific mother of thousands. Her mate "Tryton," like those of his sex sometimes in other departments of animated nature, had become somewhat unruly, and has been assigned his abode, for the time being, in one of the ponds with the family at large. Our friends have so educated and trained the old Queen that she has become as tame as a pet chicken, and ate minnows from our fingers as readily as Carlo would a piece of meat. This fish was taken from the tank and placed in a pan for our inspection.—She is, like all of this family, truly beautiful. She measures about seventeen inches in length; her weight we now forget, but with careful feeding can be increased with astonishing rapidity. We were presented by the gentlemanly proprietors with a most beautiful engraving of her.

It is the intention of these gentlemen to have some of the old and a number of the young fish on exhibition at the Ohio State fair the present fall. The display of domesticated Salmon and Trout, it is said constituted a most interesting feature at the great national exhibition recently closed in France.

Dr. Garlick is now engaged in writing a series of articles on the "Artificial Reproduction of Fish," which appear in the *Ohio Farmer*. They will finally be published in book form, and will no doubt prove of immense value to farmers and others who own streams and ponds in this country.

In every State in the Union, and in almost every county, there are numerous springs and streams, that with comparatively little labor, may be turned to profitable account for the production of fish. Where brisk, cool streams are not to be found suitable for trout, ponds exist, adapted to various other kinds of fish that delight in still water. In a day's ride through some sections of the country, we have frequently met with a dozen of springs and streams that might be profitably employed in this way. In France and other countries of Europe, not only trout and many other still water fish are propagated to a great extent, but salmon by thousands are reared to full size in a very short time. In the northern and eastern sections of our country, but more particularly on the northern Pacific coast, numerous places abound, most admirably adapted to salmon. It is said that a thousand pounds of fish, in proper places, can be raised

at a tithe of the cost of an equal quantity of meat.

#### TIMOTHY--FALL SOWING.

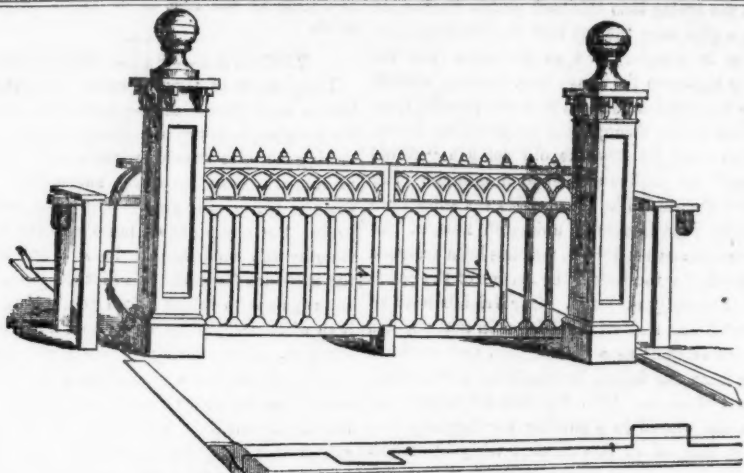
Many acres of timothy sown last spring are lost in consequence of the excessive drouth of the season; and even in ordinary seasons, spring sowing more frequently proves a failure in whole or in part, than it proves successful. When sown in spring it is almost uniformly sown with grain; the grain grows more rapidly than the timothy and soon overshadows it, and extracts the moisture from the soil that the young timothy requires to insure a firm foothold to enable it to withstand the increased heat and drouth of summer. If the spring proves a wet one, and the timothy makes a good start, it is greatly retarded in its growth and many of the young plants are entirely killed out by being overgrown with the grain, or trodden down and lost in the act of harvesting, and by the pasturage of stock upon the stubble of the grain, so that the timothy under the most favorable circumstances the following season will not cover the ground so well as that which is sown in the fall.

A thorough preparation of the ground is as necessary for a timothy meadow as for any other crop. Indeed, we consider it more important. The ground should not only be well broken up, but the surface should be well harrowed and rolled.

The introduction of mowing machines renders it necessary that all meadows that are to be cut with them should be freed from all stones, stumps and grubs, and that the surface should be as uniformly smooth as it can well be made. This is not only demanded on account of the free, unobstructed use of the machine, but the success and profit of the crop will more than compensate for the extra labor in preparing the soil. For all crops this important requisite is too much overlooked. "Land well prepared is half tilled," to say nothing of the increased yield from such preparation.

If the ground is sufficiently wet to admit of good preparation, timothy should be sown as early as the 15th of September, but if it cannot be prepared earlier, with favorable circumstances, it will do if well sown as late as the 10th of October, but when sown early the plants have time to become well rooted and are in a better condition to withstand the effects of winter and spring frosts.

Not less than one bushel of seed should be applied to six acres. We are aware that one gallon to the acre is considered seed sufficient by some farmers, but twice that quantity is better than less.



WOODRUFF'S NEW SELF-ACTING GATE.

Mr. Woodruff sometime since obtained a patent for an improvement in farm and ornamental gates, and a full-sized working gate was on exhibition at the late fair of the American Institute, at the Crystal Palace, New York. Those who witnessed the operation of that gate expressed themselves highly pleased with its operation; but experience has demonstrated that self-acting swing gates are objectionable, from their liability to damage by heavy gusts of wind and gales. To remedy this and other defects, Mr. W. has invented the gate represented by the annexed engravings, and has made an application for a patent through Fowler & Wells' Patent Agency, of 308 Broadway, New York city. This gate does not swing horizontally, but is composed of two separate parts, one being attached to each post by two hinges operating vertically. The gate is jointed so as to close up something after the manner of a lady's fan, yet in a very firm and substantial manner. As

each half of the gate is but four or five feet long it can easily be made strong and durable. This gate is balanced upon its hinges by counterweights beyond the posts, and is operated by the wheels of the carriage or runners of a sleigh, which moves the rod over which it passes. This rod operates the side bars or chains, which move the gate as desired, opening it on approach and closing on leaving.

We are informed that the inventor is prepared to deliver the gate represented in the engravings, boxed for shipment, with directions for putting it up, so plain that any ordinary mechanic can understand them, without the main posts, which can be constructed to suit the taste of the applicant—for \$35, which is less than it could be manufactured for without the labor-saving appliances possessed by him.

Any orders may be addressed to Fowler and Wells, New York, or to the inventor, at Elizabeth City, N. J.

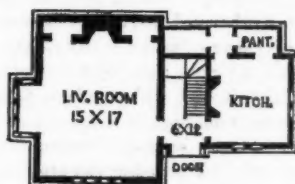






A CHEAP COTTAGE.

The accompanying design illustrates a small cottage, taken from Downing's work on Cottage Houses. It is neat externally and convenient within, being well adapted as a farm or village residence for a small family. This plan will be readily understood without much explanation.



The plan of the first floor of this cottage shows

#### AGRICULTURAL EDUCATION.

So important do we consider this subject that we expect to treat it often and in many different ways, always, however, preserving the unity of the thought of elevating the farmer and farming.

We hold that farming is both a science and a trade. It is a science, inasmuch as everything produced on the farm comes into being, grows and matures upon scientific principles, or in accordance with fixed laws. It is a trade inasmuch as its successful operation requires the hand of experience. It is more than a science, and more than a trade. It is both. Hence an agricultural education is more than a collegiate education, more than can be obtained from books, laboratories, lectures and study. Though one has been through all these thoroughly and understandingly, he is not an educated farmer.

an entry 6 by 12 feet, containing a flight of stairs to the chamber floor, under which are stairs to the cellar. On the left is the living room of the family, 15 by 17 feet. The deep chimney breasts at the end of the room gives space for two large closets. The bay-window measures 6 feet at the opening (in the clear) and is 3 feet deep.

On the right of the entry is the kitchen—a small lean-to addition, containing a small pantry, 4 by 6 feet, and a closet the same size, which may be used for clothing or some other purpose. Between the two is a passage to the back door.

It is estimated that a cottage of this description, within six miles of New York City could, be built for \$600. The cost, however, must vary in different localities with the price of material.

He may be a scientific farmer; but he will lack the practice. Though one may have learned the use of farming tools, and the handwork of practical farming, and may have learned to do as his father and grandfather did, because they did so, and if this is all he has learned, he is not an educated farmer. He may be a practical farmer; but he will lack the science of his profession. An educated farmer is one who combines an educated head with an educated hand. It is too often the case that farmers and tradesmen have only educated hands. Their heads are not educated. How much more successful and useful would they be if they possessed educated heads. They were never given such massive brains to carry about all the days of their lives, to no great purpose. To cultivate both the head and hand requires two kinds of educa-

tion, one for study and the other for practice. The more they can be combined the better. So far as we can see the agricultural college is the most successful place for head culture, and the farm for hand culture. But now that agricultural colleges are few and far between, scientific farmers could in a good part supply their place by taking young men and giving them a good practical education, based upon scientific principles. Two or three years with a scientific farmer, with books, papers and instruction would be of great benefit to a young man, ambitious to be a true farmer. This plan is adopted to considerable extent in England, and it seems to us may be in this country. We have a few truly scientific farmers in our country. Let them offer to take young men upon fair terms and give them a course of instruction, both scientific and practical, and let it be long enough, and thorough enough to make them good farmers, and it seems to us they would soon have pupils. Our cities and towns are full of young men who ought to embrace such opportunities. Many farmer's sons need just such a tutelage. If such a practice could be adopted it would be very useful and tend to the elevation of agriculture as well as the whole country. \*

#### KING CRAB.

This shell fish, known more commonly under the name of *Horsefoot* and sometimes called *Sea Spider*, is abundant in many of the bays and harbors of many of the Atlantic coasts.

In the early part of summer, at the time of high tide, they come to the shore in immense numbers to deposit their eggs in the sand. They come in pairs; each female deposits many thousand eggs. The eggs are often gathered up in wagon loads and are used in feeding chickens, and the crabs are used for feeding swine, but when fed to a great extent are liable to impart a fishy taste to the pork.

The female crab is about twelve inches wide and more than double that in length, including the tail, fore part to the joint—in the body is about twelve inches long—hence its name. The male crab is hardly half the size of the female.

Since the discovery of guano and its wonderful effects upon the worn out soil of the older States various substitutes have been employed for it. In New Jersey and in some other States establishments have been erected for the manufacture of manure from the King Crab, and it will, no doubt, prove a valuable manure, it having been used for years, in some places in its unbroken state for this purpose. *Bony Fish* or *Manhaden*, a fish that inhabits the Atlantic

coast in immense numbers are now also extensively used in the manufacture of artificial guano, they having been employed as a manure for ages, either in the form of compost made of a mixture of turf or surface soil, with the fish spread immediately in the corn field where they soon decompose and produce a wonderful stimulating effect upon corn, as well as doubling the yield of grain that follows; but used in either of these ways the manure is liable to great loss from the great number of maggots that are bred in it and devour it. When manufactured into guano, a considerable quantity of oil is secured in the process, and the loss by flies is avoided.

These fish weigh from one to two pounds each, and several hundred thousand are often enclosed in a seine at one time, and we have seen upwards of a million taken at one haul, requiring several days to land them, which is effected by enclosing a part at a time with smaller seines, cast within the large one. The great demand and high price of guano, and the extensive manufacture of other concentrated manures for the restoration of the worn out soil of the older States should teach us important lessons in regard to the management of our lands in the West. Our richest virgin soils, by continued and injudicious cropping, such as is now practiced by too many of our farmers, will ultimately become exhausted, and require the renovating effects of guano just as surely as the soil of Maryland, Virginia and other Atlantic States now require it and without which farming in these States would not be remunerative.

By a system of improved farming in arranging and carefully husbanding and properly applying all the manure that can be made on a regular rotation of crops on the farm, the destruction of soil may be avoided and the necessity for the application of these foreign manures avoided, which cannot be rendered available to us on account of our great inland position.—And besides the improved system of farming is annually more profitable than the exhausting system.

SPADING VS. PLOWING.—“Wonders will never cease,” has often been said, and still holds true. To the astonishment of the farming community “and the rest of mankind,” spading machines are now being produced which are capable of doing the work of five plows in width, and from eight to ten inches in depth, with the power exerted by one or two yoke of oxen. It does more—the soil is left as free and light as when thrown up by the expert hands of a genuine son of Erin with an ordinary spade.

[Written for the Valley Farmer.]

**Lightning Rods.**

MESSEES EDITORS:—It is an old saying, and I think a very true one, that "There is policy in war," but I think it would be very bad policy in a General to take a city from the enemy and when he had it fully in his possession to take no measures to secure it from recapture. So I think it equally as bad policy for men to labor hard to accumulate property and then neglect the proper means to make it secure. Every man that owns a good dwelling house or barn, knows, or ought to know, how many dollars and cents it cost to build it, and it is frequently the case that the contents of a building are worth three or four times the value of the building itself. For instance, we will say a barn cost five hundred dollars, and the owner has in it two thousand bushels of wheat, worth one dollar a bushel, his barn is then worth two thousand five hundred dollars, and besides all this, he may have in it three or four good horses and farming implements to the amount of another thousand dollars. All this property stands unprotected against the most powerful of all the elements—Electricity. Ten dollars expended for a conductor will secure as large a building as any of our western farmers have on their farms, either barn or house.

If nothing but property was exposed we should not wonder so much at people's indifference on this subject, but a man's own life and those of his family are unprotected against the raging element when he has no conductor to his house. When I see a man build a high house and live in it without having a lightning conductor attached to it, I think he is pursuing very bad policy.

Mr. E. Merriam, the great meteorologist, says that his record for the last fourteen years gives an aggregate of seven hundred and fifty deaths by lightning on the land, only one person being killed in a building furnished with lightning conductors. He says there were three buildings burned by lightning which were furnished with conductors. There is not the least doubt in my mind that there was some deficiency in the conductors on those buildings. They were not high enough above the building, or not deep enough in the earth, or otherwise they communicated in some part with the building. A rod, unless it is properly put up, does more harm than good to a building. When improperly put up, it serves to conduct the electricity into the building, when it might have been attracted to some other object.

A conductor, put a sufficient height above a building, properly furnished with insulators, and inserted deep enough into the earth will make any building secure against lightning, and I think every man owning a building, that would look to his own interest, should secure it immediately, for to-morrow may be too late.

J. G.

*Pleasant Vale, Ill.*

[Written for the Valley Farmer.]

**HEDGE FENCES.**

MESSEES EDITORS:—For the propriety and safety of setting hedge plants in the fall we have the same arguments that we have for setting fruit and other trees in the fall. These are few and simple, as we find them in books and in the files of our best agricultural papers in past years. It will answer all my purpose to present them here as exact quotations, and with your permission I will do so. From a New York horticulturist, in a paper of that State, I find the following:

"Autumn is the best time for transplanting hardy trees, such as the apple, pear, quince, &c. An experience of a quarter of a century, during which period we have rarely, if ever failed to do some planting, both in the spring and autumn, leaves no doubt in our mind, that the autumn is preferable to the spring for this all-important work. The fall planting favors the packing of the soil and prepares the young tree the better to vegetate in the opening of the season. This is the best season for planting every species of deciduous trees."

A writer of the West, in the *Valley Farmer* last year, argues as follows:

"In a cold, northern climate, and in a tenacious clay soil, it is perhaps best to defer planting trees till spring. But in this section of the south-west, particularly where the soil is not too retentive of moisture, the fall is decidedly the best season to plant most kinds of trees, and particularly apple and peach trees. In planting fruit trees, care should be taken to press the earth firmly around and under the roots. If cavities are left under the bottom of the tree, as they often are, when planted in the spring they prove injurious to the success of the tree; but when planted in the fall the rains of winter cause the earth to settle firmly around the roots, and the growth is sure and rapid in the spring. When trees are planted in the fall the roots will often make a considerable growth before spring."

These *advantages* of fall setting, and all others which can be named, are as much greater in the case of setting hedges, as is the importance and labor and hurry of setting extensive lines of hedges greater than that of setting orchards.—For the fact is, that to the extent which hedge-

growing is now undertaken in our country, year by year, it is impossible to crowd the setting all into the spring season.

I am aware that reasoning from analogy will not suit some persons. With regard to setting the Osage Orange plant in hedge row in the fall season, we have some testimony as *positive* as can be desired.

The hedge grown by Mr. A. H. Ernst, around Spring Grove Cemetery, Cincinnati, he says was set early in November. This hedge, the Ohio State Agricultural Society's Committee reported in 1854 as the *next best* to that which they awarded the premium. It was then six years old.

To come now to personal knowledge, I can say I have seen some hedges which grew well of both fall and spring setting, and some setting of both seasons that did not. Between fall setting and early spring setting there is more difference caused by the manner of setting than anything else. I advocate setting hedges in the fall—all that can be well done, from the time of the first frost until the ground freezes. I hope to set more this fall than I did last spring. Hedges can be set in the fall with much more safety than late in the spring, after the middle of May, unless it be very wet and continue so a month. But in both cases, and in all cases, I shall hereafter insist upon more careful setting, deeper plowing and deeper setting than have most generally been practiced, or than I have heretofore practiced myself. I find the plants and the season are often blamed for failures which are chargeable only to insufficient plowing and careless setting. Instructions are not too definite upon this point. Mr. James McGrew says:—"Break the ground from twelve to eighteen inches deep."—[Pamphlet, page 10.] Mr. H. W. Pitkin, in his directions upon preparing ground for setting, says: "If you have no subsoil plow, go two or three times in the same furrow with the same plow. Break up thoroughly at least fifteen inches deep."—[Pamphlet page 5.] Mr. C. R. Overmann, Canton, Ill., in his pamphlet (page 9), says, "Set the plants two inches deeper than they stood in the nursery," and emphasises the words very conspicuously. And for this peremptory direction he gives the sound reasons of dear-bought experience in the following words: "Unless the plants are set very deep, the ground will recede from the plants in setting, and expose the upper parts of the roots, a common and fatal error."

LOGAN SLEEPER.

BRIDGETON, August 1856.

[Written for the Valley Farmer.]

### Meteorology for Little Mary and Neighbor Muggins.

"O Pa!" exclaimed little Mary, "see how the pitcher is sweating! How warm the pitcher must be to sweat so!"

"You are mistaken, Mary," said Mr. Thomson; "the pitcher sweats, as you call it, not because it is warm, but because it is cold."

"Why Pa! People don't sweat when they are cold; they sweat when they are warm."

"Yes, Mary; but the case is different with pitchers. That which you call sweat on the pitcher, however, is not perspiration; it is more like rain."

"Rain, Pa! How can you say so?"

Here neighbor Muggins who had been listening, could keep silence no longer.

"What! do you call that rain? For my part I think Mary is right. It is as much like sweat as anything I ever saw. Just look at the drops rolling off, exactly as they rolled off of me a little while ago in the harvest field. If that ain't sweat, I'd like to know what sweat is. I am afraid you are getting too learned to be wise, friend Thomson."

"Well, neighbor Muggins, if it will not bore you to listen, I will explain the matter to Mary."

"Oh, I will listen to anything you have to say; but I tell you it won't be easy to convince me that sweat on a pitcher is rain."

"Well, Mary, I will explain the subject to you as well as I can. Can you tell me Mary, where the rain comes from?"

"Why, out of the clouds Pa, of course."

"Well, but where do the clouds come from?"

"Why, sometimes they come from the North, and sometimes from the South; sometimes from the East, and sometimes from the West—from almost every place, Pa."

"Yes, but did you not the other day, see a cloud forming right over our heads, without coming from either north, south, east or west?"

"Yes, Pa; and it seemed to be growing larger, though the rain was pouring out of it all the time. I wondered how it could grow larger when I should have thought it ought to be getting smaller."

"That is what I am going to explain. If you put a pitcher full of water in the open air, what will become of the water?"

"Why, it will dry up."

"Do you mean that the water becomes dry?"

"No, Pa; but it goes away."

"Yes, that is it, Mary. The process is called *evaporation*. The water becomes vapor. Does it not seem strange that you can see the water,



and see that it leaves the saucer, and yet you cannot see it as it goes?"

"Yes, it does so."

"The same thing that takes place with a saucer of water, takes place on a larger scale over rivers, lakes, and oceans. The water is continually evaporating till the air is saturated. If the Creator had not made the vapor invisible, we should be in a perpetual fog."

"What do you mean by *saturated*, Pa?"

"*Saturated* means to make full—to put as much in anything as it will hold. If you soak a sponge in water till it can hold no more, it is *saturated*."

"Well," said neighbor Muggins, "I understand that big word now. My shirt was *saturated* when I came out of the harvest field."

"If the air were stationary over a body of water, it would become *saturated* with vapor, and then evaporation would cease; just as a sponge would take up as much water as it could hold, and then would take up no more. But the comparison of the air with a sponge does not hold good in one very important respect.—When air is heated it holds a great deal more than when cold. At the freezing point of water 160 pounds of air will hold one pound of water; but if it is heated to 86° the same quantity of air will hold four pounds of water; when air is heated as hot as boiling water, 160 pounds will contain nearly eight pounds of water. Now suppose such a portion of air containing four pounds, for instance, to be suddenly cooled so that it can contain only one pound, what becomes of the remaining three pounds?"

"Why, it can't stay there if the air will not hold it; but I can't think where it will go."

"If a sponge is *saturated*, and you squeeze it so that it will not hold so much, what becomes of the water?"

"The water runs out on the ground."

"Well, the water runs out of the air in the same way. This is the way in which rain is produced. Air containing moisture, is in some way cooled till it cannot hold so much as before, and then what the air cannot hold falls to the ground as rain. The great sponge is squeezed, and the water falls out."

"But, Pa, I thought the rain came from the clouds."

"Yes, the vapor generally takes the form of a cloud before it falls. A cloud is vapor made visible. In warm weather, you know you cannot see your breath; but in cold weather you see a kind of smoke coming from your mouth. This is the moisture in your breath made visible by coming in contact with cold air. Clouds are

formed in a similar way."

"I think, friend Thomson, that the breath is more like a fog than a cloud."

"Well, fogs are nothing else than clouds nearer the surface of the earth. After a warm day land radiates or sends off its heat; in other words, becomes cool, much more rapidly than the water. The air on the land is cooled as the land cools; that on the water retains the temperature of the water. The warm air over the water, being nearly or quite *saturated* with moisture, is suddenly chilled when it touches the cold air from the land, and the vapor is made visible as fog. When the same thing takes place at a distance above the earth, the vapor becomes a cloud. To those who ascend mountains, the clouds which they pass through have the appearance of fogs."

"Well, friend Thomson, we were in a fog; but I think you are getting us out of it."

"The air over the land may sometimes be warmer than that over the water. In this case, a fog will be produced as before, if the cold air comes in contact with the warm, so as to chill it."

"But, friend Thomson, when a cloud is made away up in the air, where is the land and the water to make the warm and cold air?"

"A warm current of air or wind meeting with a cold wind, is chilled. Rain generally falls only when the winds are variable. A wind blowing in one direction, and meeting no other, may contain a great deal of moisture without producing any rain. It must meet with something to cool it. In the neighborhood of mountains there may be a great deal of rain while the wind is blowing all the time in one direction. In this case, the wind striking the sides of the mountains, is turned upwards till it strikes the cold air above. It is then chilled, and deposits its moisture, or in other words, rains."

"Pa, when I went out this morning the ground was so wet that I thought there must have been rain last night; but there was no clouds, and of course there could have been no rain—it was only dew."

"Yes, it was a very heavy dew. But it is not true that clouds are absolutely necessary to produce rain. Rain has been known to fall for several minutes when no cloud was visible.—When air becomes cooled so as to part with some of its moisture, the moisture generally takes first the form of small globules, or very little balls of visible vapor; a great number of these form a cloud; several of these globules uniting form a drop of rain. But the moisture

is sometimes changed to rain at once, without passing through the state of visible globules."

"Is that the way dew falls, Pa."

"Dew does not fall, Mary; it is formed near the surface of the earth."

"What! friend Thompson; do you say dew doesn't fall? Don't we always say 'the dew is falling,' or 'a heavy dew fell last night.'"

"Yes, Pa; and you know what the poem about the pet lamb says,

"The dew was falling fast; the stars began to blink."

"Yes, we speak of dew as falling; but you know it does not fall like rain. You never felt a drop of dew fall on you as a drop of rain does. If you are out in the night air, you feel your clothes gradually becoming damp; but you feel no drops falling on them."

"Where does the dew come from, then?"

"Dew is formed on the same principle as rain; that is, by the cooling of air nearly or quite saturated with moisture. As the sun goes down, the earth radiates its heat, that is, sends off its heat and becomes colder. The warm air then becomes chilled by touching the cold earth, and the moisture is gradually deposited in the form of dew."

"Why has the grass more dew on it than the ground has?"

"Grass radiates heat, or becomes cold, more rapidly than the ground does; the air in contact with the grass becomes colder, and the colder the air the more moisture is deposited. The grass squeezes the sponge with more force than the ground does. Now, Mary, touch that pitcher. Is it not colder than the air in the room?"

"Yes, Pa, it is a good deal colder."

"Well, can you not tell now what is the cause of the pitcher's sweating?"

"Oh, I think I can. Let me see. The air in the room has a good deal of moisture in it; and when it touches the cold pitcher it is made colder and leaves some of its moisture on the pitcher."

"Yes, that is it. So you see that the water on the pitcher is produced by the same cause that produces rain, and is consequently more like rain than perspiration."

"Well, friend Thomson, I must confess you have done the thing up pretty well."

"Now, neighbor Muggins, you have often heard me talk about deep plowing, and the necessity of stirring the ground in dry weather."

"But what has that to do with the water on the pitcher?"

"Why, a good deal. You see that anything which becomes considerably colder than the air

gets moisture from it—the ground as well as other things. In the dryest summer, there is moisture in the air. To make use of this moisture, we have only to cool the air. In other words, the sponge has the water, and we only want something to squeeze it. We can make the ground our sponge-squeezer. Loose ground becomes cool faster than ground which is closely packed, and it admits the air everywhere through it. The air being cooled deposits its moisture everywhere through the soil. So when rain refuses to come from the clouds, we can make rain for ourselves by a proper use of the laws of the Creator. Some tell us not to plow the corn in dry weather. But I say the dryer the weather the more the ground should be stirred, care being taken not to injure the roots. I believe if a good soil is plowed to a sufficient depth, and kept loose during the summer, that corn, with a good start in the spring, will ripen without a summer rain. But I have talked till I am thirsty. Let us try the *inside* of that pitcher."

N. B.

[Written for the Valley Farmer.]

#### Wire Fence---Hedge Fence.

MESSRS EDITORS:—About a year ago I saw some account of the Lowell Wire Fence Company, who are manufacturing material for wire fence, at Lowell, Mass. I should like to be informed if they have an agent in the West, who can give information with regard to the manner of construction, durability, cost, &c., of said fence, and whether it can be furnished to Western farmers without ordering all the way from Massachusetts.

By the way, while speaking of fences, I would suggest that a man who wishes to engage in the Osage Orange hedge business, could do well in this part of the country. Our prairies are very fertile and we have not timber sufficient to fence them.

A successful hedge grower could make a fortune here.

A SUBSCRIBER.

Graham, Nodaway Co., Mo., July, 1856.

REMARKS.—We are not aware that the Lowell Wire Fence Company have an agent in the West. Neither do we know that there is such a company in existence.

The only information we are able to give on the subject of Wire fences is, that James E. Butts & Co., are engaged in manufacturing woven wire fence, at Boston, Mass. Any one addressing them will be furnished with a pamphlet containing full descriptions and prices.

## Stock Raising Department.

### Beef Cattle—Where is the Supply to come from?

There were sold of the New York markets in the last week in July, 3,691 bullocks, 10,000 sheep, 2,500 hogs, and 1,000 calves, and the market reports state that on such a day as Wednesday of that week, over 2,700 beef cattle could be sold at Bull's Head, averaging about 650 lbs meat each at 9 cents per pound.

It is a fact that notwithstanding the number of beef cattle that reach the principal eastern cities from remote parts of the Union, and from those parts too that have not furnished these markets until the establishment of recent rail road facilities, the general supply in proportion to the demand is constantly diminishing and the price is steadily on the increase.

From the report of the proprietor of the Washington Drove Yards, New York, one day, giving the number of cattle and the States from whence they were received, it will be seen that out of 3053 beeves received, but 383 head were from Eastern States, viz: New York, 377, from Connecticut, 6; and 2670 from Western States, as follows: Ohio, 814; Indiana, 77; Illinois, 1144; Kentucky, 410; Iowa, 132; Texas, 93, and this corresponds in some degree with the weekly reports generally, so that it will be seen that the great Eastern markets are to look to the West for their supply of beef.

Our object in introducing this subject is to show our Western farmers the importance of paying more attention to this department of their business. At the present prices of beef there is no branch of farming more profitable than stock raising, none that can be carried on with fewer farm hands and at less expense.

A farm devoted to stock raising may be constantly increased in fertility and richness, while one that is employed in the cultivation of the cereals is liable to constant and speedy exhaustion. There are thousands of acres of wild lands in Texas and other southern and western States, admirably adapted to stock raising, where the expense of rearing and wintering is comparatively trifling. But in this business as in all others, every farmer should aim at improvement. A half, three quarter or full blooded Durham, which will cost no more to rear, will bring at three years old, say \$75 or \$100, while for an animal of the common breed, hardly half this sum can be realized.

Our Kentucky farmers are now prepared to

supply breeders with animals of the best blood and on reasonable terms. The illustrations of premium animals found in our stock department from month to month will show who these breeders are.

### WORKING COWS.

A farmer in California states that he has plowed 75 acres with a yoke of cows the past spring. He says they are faster walkers than oxen—that they give milk and save the expense of keeping another team.

We have seen some farmers who worked cows and have heard of some others who have done so, and the question has frequently been asked in the Agricultural journals, in regard to the propriety of employing them in this way upon the farm, and in some instances we regret to say we have seen answers favoring the measure.

Now we should expect the man who would yoke his cows to the plow, would require his wife to hold the handles, and if he employed this kind of team to haul in his winter's wood, or to draw stone for his fences, why should not the good wife be expected to cut the one and quarry the other, as well as drive the team? Now there may be no *inhumanity* in either case, but if the question was answered *physiologically*, we should say cows should never be worked. In order that all the functions of the animal economy may be performed so as to insure full and healthy secretion of milk, the cow requires a certain time to eat—but more or less according to the condition of the pasture, or the quantity of food given her. Then she will require a season for rest and rumination, and so alternately throughout the twenty four hours.

Now if the cow is compelled to work 8 or 10 hours out of the twenty four, her blood becomes heated and the animal fatigued and consequently the secretion of milk is impeded and deranged, and its healthful quality effected. Nor do we believe that if a cow is highly fed, and worked eight hours a day, that she can give milk and retain her flesh. She will either loose her flesh, or there will be a constant falling off in the supply of milk, so that the farmer who attempts to gain by working his milch cows, instead of oxen, loses more than he gains, in the loss of the milk and in the condition of his cows. This may be illustrated by the fact that a horse, ox, or other animal that is made to work, will require, besides the necessary food to build up and sustain the system, a large additional quantity to restore the muscle that is expended by that labor, and the cow that is made to labor will expend a large amount of food in restoring

the waste of muscle that would otherwise go to keep the up secretion of milk, and consequently there will be a loss of one or the other, or both. Let every honest, sensible, humane farmer be satisfied with his cows, if they furnish, besides their natural offspring with food, his family with an abundant supply of pure, healthy milk, without taxing their strength and wasting their flesh by forcing them to labor.

[Written for the Valley Farmer.]  
**Improvement of Cattle.**

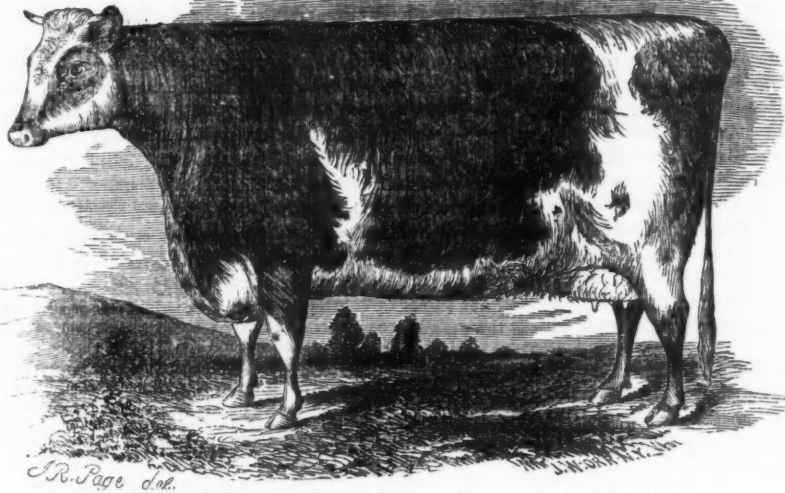
MESSRS EDITORS:—Being in the habit of reading your *very valuable* journal every month, I was much pleased by some very practical remarks by Messrs W. & C. (which I saw in the May and July numbers,) relative to the improvement of cattle. Having been a breeder of Durham cattle myself in England for many years, perhaps a few remarks upon the subject may not be considered out of place.

In Durhams, perhaps more than in any other kind of cattle, the pedigree of the sire and dam is attended to with the greatest care, and amongst the Durham breeders it is considered a *sine qua non* that the bulls they use should be well descended, whence extraordinarily high prices have been, and still continue to be given for Durhams of both sexes, provided they are symmetrical animals, with an unstained pedigree. At present I will confine myself principally to a few remarks in regard to the selection of bulls to be used in a short horn herd. I think a breeder of short horns cannot be too careful how he selects his bulls, as upon the male animals principally depends his success as a Durham breeder. The main object should be to obtain a thorough bred animal for as Mr. W., *very justly* remarks there is a wide difference between a full blood and a thorough bred animal, many animals which are in the English herd book, having 5 or 6 crosses are not worth more than a well bred looking animal which you might purchase at any county fair, because part of the crosses are bad. The Short-horn herd book is well known to every one who professes to breed pure Durhams and an experienced breeder estimates the value of an animal the moment he learns its pedigree. It is notorious that from their anxiety to adhere to one particular strain of blood, many Short-horn breeders have injured the size and constitution of their herds, a circumstance greatly to be lamented, as it has produced in many instances a delicacy of constitution and liability to disease, amongst some of the highest and best bred Durhams, analogous to which are the injurious ef-

fects of a too close affinity in the human system. With respect to crossing, it is found by all experienced breeders that there is great difficulty in doing so successfully from inferior breeds, as, however good the animals may be, unless well descended, no reliance can be placed upon the progeny, and hence frequent failure and disappointment are the result. In the early days of Short-horn breeding there might be some excuse for this close adherence to one line of blood, but in the present day when herds are more numerous, it cannot be so difficult to obtain a change of good and pure blood. In the larger herds several bulls are always kept which gives the extensive breeder a great advantage over the smaller one, as he can put every cow to the bull best adapted for the correction of her deficiencies, and it is in this art that the great secret of breeding successfully consists. I have, however, frequently seen very ordinary looking bulls, with good pedigrees, get first class stock, for instance, Mr. Charles Townsley, the most successful Durham breeder of the present day in England, has a bull called Jasper, a very ordinary looking animal, but he has got some of the best stock Mr. Townsley has in his possession; his pedigree is, however, first rate, therefore I would much rather sacrifice a little in the points of an animal if his blood was good, than have him with undeniable shapes and a bad cross in his pedigree. Suppose a Durham breeder has succeeded in raising a very fine herd of Short-horns, perhaps he requires a bull to cross his heifers with, as his own may be too nearly related; he goes to some breeder and purchases an animal with a long pedigree, but one which is not *correct*, or has a *bad cross* in it; he uses that animal among his stock and he is the ruin of the herd, because hereafter that bull's imperfections (or those of the animals where the bad cross took place) will be perceived in the progeny but not perhaps until the bull has been used for a season or two among the Herd, and then most of the mischief has occurred, hence the absolute necessity of studying carefully the herd book and purchasing Durhams from breeders of undoubted reputation, such as R. A. Alexander, Esq., R. W. Scott, Esq., and the Messrs Gratz, &c., &c. None of these gentlemen will keep an animal with an indifferent pedigree among their herds. I am myself slightly acquainted with Mr. Alexander, having met him frequently at the principle sales of Durham cattle in England and there is one thing *certain* and that is that I never saw or heard of him purchasing anything but what was considered first class, and *always* the *best* of them.—There is nothing I should like more than to see Mr. Alexander's herd, and I trust some day I shall have that pleasure.

J. W. FAIR.





SALLY SMITH. (See American Herd Book, Vol. 2, page 554.)

Two years old. Owned by BENJAMIN WARFIELD, Lexington, Kentucky.

PEDIGREE OF SALLY SMITH.—Red and white; bred by Benj. Warfield, Fayette county, Ky.; calved Nov. 23d 1852; got by Reniek, (903), out of Cherry 2d, by Don John, (426); Cherry by Goldfinder, (2066); Stella, by Oliver, (2387); May Dacre, by Accommodation, (2907); Miss Haggin, by San Martin, (2599); the imported Teeswater cow, (1817).

1855, March 30, roan B. | Bolivar. | Young Chilton, 1131. | Benj. Warfield.

[Written for the Valley Farmer.]

#### Durham Short Horned Cattle.

As the first exhibition of the St. Louis County Agricultural and Mechanical Association is to be held this fall, the undersigned thinks it will not be inappropriate to give a short account of his experience in the raising of fine stock and the profits that may be derived from it.

In 1833 I first gave my attention to raising and improving the breeds of fine cattle, horses, sheep and hogs, on my Clifton farm, three miles north of Cincinnati, Ohio. I obtained a few thorough bred cows and heifers and a bull, taking care that they should be as perfect in form as in blood. Prices were then comparatively low. My stock was the improved Short-horned Durhams which I then considered the best breed of cattle in our or any other country, and as yet I have had no reason to change this opinion.

In breeding I was careful that obvious defects in important points in the cow should be particularly noted, and equally careful that the corresponding points in the bull should be good. By strictly observing this simple rule and

carefully abstaining from breeding in-and-in, in the course of three years, I had a fine foundation on which I reared a stock of Durhams, which for numbers, purity of blood, and symmetry of form, was surpassed by the herd of no gentleman in the Union.

I was careful every year to add a few fine pure bred animals, males and females, selected from the finest herds in the country. (I am an advocate for frequent crosses in animals.) I know of no business that pays so well as the raising of fine stock, if a man has a taste for it. For three years previous to my great sale of Durham cattle, the stock disposed of from my Clifton farm exceeded an average of \$10,000 per annum, at least 75 per cent of which was clear profit. My horses, sheep and hogs were of the best breeds of the country, and from them all I derived good profits. I had ten imported bucks and ewes of the South Down and Cotswold breeds, and from that importation much of the West has been supplied and the stock of sheep greatly improved. I consider the cross of the Cotswold on the South Down makes the most profitable sheep in our country. I have had the pleasure of taking many beautiful and

valuable premiums with my horses, cattle and sheep, which I still have and look at them with pleasure as mementoes of by-gone days.

It gives me much pleasure to see that a spirit of enterprize and improvement is being awakened among the citizens of St. Louis county.—Certain it is that no part of the West stands more in need of an improvement in an agricultural department than our county. I anticipate much good will result from the Agricultural Society recently formed in our midst. It commences on a large, indeed, a magnificent scale, and offers inducements for competition, such as has not been presented before in the West. I have not seen the constitution and bye-laws of the Society and do not know whether they exclude competitors from other States, but do not suppose for a moment that such is the case.

CHAS. S. CLARKSON.

*St. Louis County, Mo.*

#### TREATMENT OF COLTS.

A subscriber at Lexington, Mo., solicits information upon the subject of raising colts, and also wishes to know how he can tell which colts will make large animals.

We recommend in the first instance, to those engaged in raising colts, to breed from the best stock that can be procured. Too little attention is paid to this matter. Most people think that if they get colts, that is all that is important—forgetting that a colt, when it becomes a horse, if it prove to be a fine one, will be worth double or treble the amount of a common one. It costs no more to raise a good colt than a poor one, and consequently it must be far more profitable to raise the very best that can be raised.

Colts should be allowed to run with the dam until they are about six months old, at which time, as a general rule, we should recommend that they be weaned. Of course it is better not to work the dam at all while the colt draws milk from her. By working the mare many colts are seriously injured by drawing heated milk, and never recover. The utmost care and attention should be bestowed upon colts during the winter season. They should be watered and fed at regular hours. They need a variety of food and the very best of whatever kind is fed them.—Carrots are excellent food for them. Two or three quarts of oats per day may be given them. Good hay or cut feed should be allowed them in proper quantities daily. They should be kept in warm, dry stables, and we are averse to their standing upon plank floors, because we believe their limbs are frequently injured by standing upon this, to them, hard and unnatural floor.

So are we opposed to their standing week after week and month after month upon the heaps of manure that accumulate under them. Such heaps become veritable hot beds and they have anything but a beneficial effect upon the hoofs and limbs of a colt. A good, hard, dry ground floor, kept clean, we regard as being the best floor upon which colts can stand. But in our climate colts can be permitted to run out in the yard in the winter season during the day time, to decided advantage. They need exercise. It is almost indispensable to them.

In reference to determining the size which the colt will attain, we do not know that we can do better than to give the views of J. R. Martin, Esq., of Lexington, Ky.

“When the colt gets to be three weeks old, or as soon as it is perfectly straightened on its limbs, measure from the edge of the hair on the hoofs to the middle of the first joint, and for every inch, it will grow the height of a hand, (four inches), when its growth is matured.—Thus, if this distance be found sixteen inches, it will make a horse sixteen hands high.”

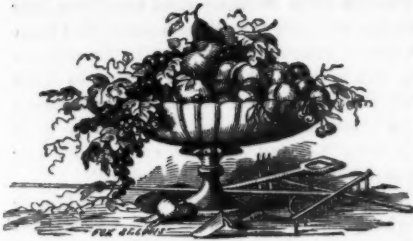
#### Cutting up Corn for Fodder.

Through various portions of the dry district we see many of the early corn fields so far advanced that the late rains cannot add to the yield of grain. Many fields of later planting will afford good crops. In every section within the district referred to the hay and oat crops are short and farmers will need a substitute for forage for their stock during winter. In the winter of 1854, after the last severe drouth hundreds of cattle died for want of food. In a land of plenty this should not be. With a little care and fore sight an abundance of coarse food can be secured in almost every season, however dry.

Corn that will not improve by standing should be cut up without delay and neatly shocked, and that which will yield a crop of grain should be cut as soon as the ears are fully glazed. If cut and put up properly the corn will dry without injury and become heavier than if allowed to stand and dry in the field. If the corn is quite green one method has been to cut and put up eight rows, leaving four on each side to be cut and added to the shock five or six days after the first is cut. In this way corn is seldom injured in any weather.

Much of the corn will be so late, if not overtaken and injured by frost, that it will make most excellent fodder. However unripe this may be, if possible, it should be cut up before severe frosts occur.

Cattle sheltered from the winds and storms of winter, with a good supply of well saved corn fodder will do well.



## Horticultural Department.

### The Effects of the Cold upon Fruit and other Trees.

Early last spring we called on Mr. Cary, of Farmer's College, Ohio, and noticed among his large collection of cherry trees, embracing all the most valuable varieties, that many of the trees had been entirely killed by the severity of the cold of last winter, while others, apparently as vigorous, were uninjured. We came to the conclusion that those uninjured were hardy varieties capable of withstanding the degree of the cold that had proved so fatal to others, and at once determined to investigate the subject, not only in Mr. Cary's collection but in various other portions of the West, in order to make out a list of the hardy varieties for the benefit of our subscribers. Having traveled much since, and examined every collection of cherries that we have met with, we regret to state that we find that none of the finer varieties are sufficiently hardy enough under different circumstances, to withstand the degree of cold that prevailed last winter; for while certain trees of one variety standing in one situation were apparently uninjured, there were other trees of the same varieties standing in other situations, and sometimes the next tree in the row, would be killed.—These results may be traced to several causes, some of which are in part under our control and others are not.

The Bigarreau and Heart varieties on good soil are strong, vigorous growers, the wood being porous, it contains a large amount of moisture and they are consequently more readily injured by cold than the more compact growing firmer wooded varieties, like the Morello family. We find that the trees of the finer varieties that escaped injury were such only as grew on a dry or well drained soil, not over rich, standing free from the reflecting rays of the sun, from surrounding objects and particularly those that were not stimulated to a late fall growth by undue cultivation. The May Duke, particularly,

and some other varieties of the Duke family, by regarding these hints, may be grown with a considerable degree of certainty.

The Morello family are still more hardy and are seldom injured in favorable situations.

The ability of trees to withstand the effects of severe cold depends much upon the character of the summer and fall. If the summer is dry and the fall wet, and the warm weather prolonged, the trees that had ceased to grow in summer, make a second growth in the fall, leaving the tree full of unelaborated sap, which if exposed to severe frost is liable to burst the sap vessels and destroy the tree. Injury is frequently caused by sudden thawing under the direct or reflected rays of the sun after a severe cold night. When the Mahaleb stock for cherries was first introduced, we had strong hopes that the dwarfing effect of the stock upon the top would be such that any of the best growers and finest varieties could be successfully grown in our climate, but in this we are disappointed.

Mr. Ernst of Spring Garden, near Cincinnati, had in his beautiful grounds upwards of sixty of the finest varieties of cherries, the most of which have been destroyed by the cold of last winter. Some of the trees situated as we have described, were uninjured, and every tree of the May Duke standing at the North end of the house, where they perfectly matured their wood and where they were sheltered from the sun's rays are entirely uninjured.

Mr. Ernst had thirty varieties of cherries dwarfed on the Mahaleb stock. These occupied a very unfavorable position, being trained as espaliers against the fence. They were all killed by the reflected rays of the sun. In all probability if these trees had occupied a more open position and had their stems been protected from the sun they might have proved hardy.

The powerful effects of the reflected rays of the sun may be observed in every city where the hardy Alanthus has been set out. Trees of this kind standing upon the edge of the side walks and nearest the houses, and where the color of the paint was such as to reflect the sun most powerfully, have been killed, while the trees opposite, and perhaps at the next house, which is painted of a different color, are unharmed.

These facts furnish us practical lessons that may be turned to more profitable account than in cultivating the Alanthus.

Gardening was the occupation of our first parents. How few cultivate good gardens now.



The Great Tree of California---"Washingtonia Gigantea."

The above cut represents the relative size of this wonderful tree in comparison with those with which we are familiar in our most fertile forests.

Some accounts of this tree have recently appeared in various prints, but the first full description was furnished by our friend Robert Carmichael, Esq., formerly of the London Horticultural Society's Gardens, and since favorably known in Kentucky as the principle manager in laying out the grounds of the Frankfort Cemetery. Mr. Carmichael while travelling in California, probably in 1854, visited the region of these great trees, and furnished the following description of them which appeared in *Hoveys Magazine*. "The foliage is similar to the *Cupressus Sempervirens*, but somewhat stronger and coarser. The seed cone is like the pine, say about three inches long and two and a half inches in diameter. This mammoth growth of trees evidently belongs to the *Pine* tribe, but is without a shadow of doubt, a *new genus*. The grove contains eighty-five trees in an area of fifty acres. The trees generally average *three hundred* feet in height. The largest perfect tree standing is *ninety-five* feet in circumference at the base, and three hundred and twenty five feet high. The largest in the group has been blown down, and is decidedly and undoubtedly the largest tree in the world. It is one hundred and ten feet in circumference at the base, and

the height when standing must have been *four hundred and fifty* feet, three hundred feet from its base it measures twelve feet in diameter.—The tree is supposed by good judges to have been blown down *one thousand* years since; from counting the concentrative layers, it is over *three thousand* years old, and contains over *three thousand* cords of solid timber."

A collector of plants travelling for a firm in England saw these trees in 1850 and claimed the right to name this tree the *Wellingtonia Gigantea*, but an American trapper or hunter first discovered them in 1848. From this fact and also that they are upon American soil, it is claimed that it should be called the *Washingtonia Gigantea*.

It is still, we believe, questionable whether it is really a new genus, and some of our most learned botanists have pronounced it the *Sequoia Gigantea*.

Dr. F. Winslow, an American traveler has also visited the locality of these trees and gives some further account of them and of some peculiarities of the location which they occupy.—They occupy a narrow basin not exceeding 200 acres, of which the soil is silicious and strewn with blocks of Lignite. This basin is very damp, and retains here and there pools of water; some of the largest of the trees extend their roots directly into the stagnant water, or into the brooks.

One of the fallen trees being partially hollow has had its inner surface smoothed out by fire, so that Dr. Winslow and his companion rode on horseback into the interior of it a distance of 200 feet without any inconvenience. It is estimated that the largest tree, if cut into cord wood would yield a quantity equal to sixty acres of good wood land. If cut into one inch boards would make three millions of feet, or if cut into three inch plank would yield sufficient to make thirty miles of plank road.

The land and trees are claimed by a Mr. Lapham, probably by pre-emption, who has already sold one of the trees for \$2,000, the sections of the bark of which were exhibited in the eastern States and subsequently have been taken to Europe.

A hotel has been built on these grounds and hundreds of persons visit there to see these wonders of past ages.

These trees, while sound, retain their own record of the years they have stood. This record now numbers upwards of three thousand years, half the period of which we have any record of time, and the only *living* link that connects those remote ages with the present, and for ought we



can tell may extend back to the years beyond the flood; and yet the government of the United States suffers these monarchs of time to be claimed by one man. They are a legacy of which no other land can boast, and should be the property of the nation and free for all mankind to gaze upon. Men can build roads, level mountains and create lakes and artificial rivers, but time only is the architect of such structures, and such as these, time will never again produce.

Even should it require all the gold that lies embedded in the surrounding mountains to secure the purchase of these trees, they should become the property of the nation, and at once surrounded with a wall of iron, and a sentinel forever stationed at the gate for their protection.

While congress is engrossed with matters of less importance, let every lover of nature, throughout the nation, send up his petition, urging the purchase and preservation of these trees by the government.

**PRESERVING FRUITS AND VEGETABLES IN AIR-TIGHT CANS.**—As there has been a general failure of many of the varieties of fruits this year, housekeepers would do well to put up a large supply of those kinds we have. Some of the tenderest and best kinds of summer apples, where the supply is greater than is required for immediate use, may be preserved in this way and will be as good for pies, &c., in February next as the Green or Newtown Pippin.

Tomatoes, too, should claim a large share of attention this season. They are a most healthy vegetable and an excellent substitute for fruit in seasons of scarcity like the present. They are so cheaply and abundantly raised and so easily preserved that every family should secure a large supply of them.

There are a variety of preserving cans now in use, any of which, that can be closed air tight, will answer the purpose, and when properly arranged for the business, several hundred cans can be put up in a day by two persons.—The only requisites to be observed are—to scald the fruit in a large kettle until the air is entirely expelled from the body of the fruit; place the cans in a large flat pan of boiling water and fill immediately with the hot fruit and when brought again to the boiling point, close down the caps so as to perfectly exclude the air, and set the can away in a cool, dry place in the cellar.

We opened a can of Morris' white peaches a few days since, that were presented to us three years since, by a friend in New Jersey, which were as fresh and perfect as when first put up.

### Planting and Care of Fruit and Ornamental Trees.

Notwithstanding the repeated lessons that have been given for the planting and subsequent treatment of trees in the garden and in the orchard, we are pained in passing through almost every portion of the country to witness the unpardonable neglect, and the consequent loss of thousands of newly planted trees, for the want of a little foresight and care. So much has already been said upon the subject of properly planting trees that we shall not here repeat it; but in view of the immense number of trees that have died of the last spring's planting, of the starved, sickly and discouraging appearance of thousands of others that still retain some signs of life, we will offer a word of admonition and advice, although now too late to be of benefit the present season, but from the experience of the past we offer it as a guide for the future.

In the first place, trees, when reset from the nursery, should have all the top branches cut back, so as to restore an equilibrium between the demand of moisture by the leaves and branches, and the supply from the roots. It is a fact clearly established by vegetable physiologists, that every tree in a vigorous and healthy condition gives off daily through its leaves a large amount of moisture, and this moisture is furnished to the leaves from the earth through the roots. In removing a tree from the nursery, not only many of the small fibrous roots, the terminal ends of which, in a healthy state, are the mouths through which this moisture is received, are either injured or destroyed, but many of the larger roots are unnecessarily and carelessly, we had like to have said voluntarily, cut off and lost, so that the supply of juices to the leaves and branches of the tree are exceedingly meagre and limited.—Now, unless the branches are shortened, more or less, according to the condition of the roots, say to within three or four inches of the base of the last seasons growth, the quantity of moisture given off from the newly expanding leaves will be so much greater than the supply afforded by the mutilated roots that the vital forces of the tree becomes rapidly exhausted and it lingers and finally dies. But what too frequently tends much to hasten this result is the want of properly pulverizing the ground and digging the holes for the trees of sufficient size, and the application of rich and mellow soil to the roots. When trees have been newly planted in the way they generally are, and when followed by a dry season, like the present, they are slow in starting to grow, and soon present a sickly, dying

appearance. Then the owner becomes alarmed and at once attempts to remedy the evil by giving to each tree an occasional bucket of water, perhaps directly from the well; this settles the earth compactly around the roots and stem of the tree, which under the influence of the wind and the following days sun, becomes baked hard and only increases the evils it was intended to remedy.

A tree well pruned and properly planted in good season, in a well prepared and mellow soil with a covering four inches in depth of old straw, leaves, sawdust or tan bark, for a distance of four feet around it, will never require watering and in the driest seasons ninety nine out of every hundred trees so treated may be expected to live and flourish. This is an exceedingly simple matter and only requires to be remembered and practiced to save to the country millions of trees that are now annually lost.

**APPLE TREES KILLED BY WINTER IN LATITUDE 42 1-2 DEGREES.**—Mr. William Jackson, of Julien, Iowa, writes to the *Prairie Farmer* and says: he has 200 apple trees of different varieties, and has lost the following kinds: Twenty Ounce Pippin, R. I. Greening, Baldwin, and Yellow Russett, and thinks it impossible to have a good orchard so far North.

Last winter for severity of cold may not be equaled again in a century. But we think the reason that the varieties were killed was not because they were more tender than some other kinds, but that it was owing to some local causes. The *Prairie* lands generally are extremely rich, and many of them moist, which induce a late vigorous growth of immature wood, poorly adapted to withstand the frost of an ordinary winter.

Let our friends not be discouraged, but try again. Select the highest and dryest pieces of ground for an orchard. If it is not sufficiently dry, drain it well—cultivate the trees well in the early part of the season and after the first of July do nothing more to them than to cut off the weeds that may come up. In the fall while the trees are small, raise a slight mound around them so as to throw the water off beyond the roots. With these precautions we think our Western friends will find there is no great difference in the hardness of the different varieties of apples, except that some are more vigorous growers than others, and that all varieties may be relied on with a considerable degree of certainty, even in a higher latitude than 42 1-2 degrees, but the ground must be drained, either naturally or artificially.

### Sweet, or Sugar Corn.

This peculiar variety of corn seems adapted particularly for the table while in its green state, and indeed it is the only kind that should be used in this way, for in richness of flavor and tenderness no other varieties can compare with it. In all that constitutes a rich table vegetable it is as much superior to the common kinds as a Pryor's red apple is to a raw turnip, and yet we do not find it in one garden in a hundred, nor is it found in our city markets. If our farmers would once make themselves acquainted with its superior quality their gardens would never be without it. Our method is to plant a few hills every two weeks through the season to the 10th of July. It keeps soft and in eating order three times as long as the common kind, affording a continual succession until frost. During September we have larger plantings of it coming to maturity which is dried for winter use. It is prepared by boiling it five minutes and then cutting the grains from the cob and spreading it out upon sheets, upon a flat roof facing the sun. It should be stirred occasionally, and in three or four days it will be sufficiently dry to put away. It is kept when dry in a bag and hung up in a dry place. A clear morning should be chosen for drying the first day.

It is prepared for the table by putting it in soak and setting it in a warm place at night and in the morning it is boiled in a small quantity of water and seasoned with salt and butter to suit the taste.

### Strawberries—Fall Planting.

It is the practice of many writers to recommend setting out strawberry plants in August and September. We have repeatedly set plants in the fall as well as in the spring, and from long experience we are satisfied that it is altogether best to defer the planting until Spring. If the ground is then well prepared, it is easily kept light and mellow through the season and by fall the plants will entirely cover the ground, and will be strong and well rooted and will afford the following spring a full crop of fruit.—But when planted in the fall the plants will not become sufficiently rooted to always withstand the winter, or to give off new, strong plants, from runners to afford fruit the next spring, and the ground will become so firmly packed by the rains that it cannot easily be put in suitable order to insure a vigorous growth of the plants.

From the time the plants begin to grow in the spring up to the flowering time is the most suitable season to set the plants.

[Written for the Valley Farmer.]

### The Farmer in His Relation to Ornamental Gardening.

Great has been the exertion which the agricultural and horticultural press have put forth within the last ten years, to bring the enjoyment and blessings which Horticulture bestows upon man, to the notice of the hard working farmer. Abundant success has crowned these endeavors and much has been accomplished in this direction. In proof of this, let me only point to the astonishing progress which the culture of fruits and vegetables has now made throughout the land, abundantly repaying the farmer for his outlay and cares required by the orchard and garden. This branch of Horticulture has proved to be a paying one, and for this reason it is daily meeting with more approbation in the sight of our people, securing for it a still brighter future. Yet whilst the generous fruits of the orchard and garden greet our eyes in every direction, and the time seems to come nigh when the earth shall again bloom like Eden, we should never forget that the vegetable kingdom is not merely made by the Creator to be eat up by man or beast, but that there is a higher signification in every plant or tree which adorns the land. To admire the tree only for the apples growing on it, or for the quantity of fire wood contained in it, is but too common a philosophy with many farmers, yet nevertheless a wrong and base sentiment. It would be unfair to suppose that our first parents found Paradise delightful merely because of the enormous apples and pumpkins growing in it, it was above all that charm of perfection and beauty, reflecting everywhere, which elevated their aspirations pointing them to the infinite goodness and wisdom of their Creator. This also should be the centre to which our enjoyments of rural life should direct us, although the golden days of Eden have long passed away from earth. To find our way to this we should ever remember that man lives not on bread alone, and that his belly should not be his God; that there is a soul living in him, which is to exist forever.—This soul, if it is as it ought to be, does not find its true sphere in material things, it moves in spiritual regions, in a world of thought and impression. It is, in one word, the better portion of man, and distinguishes him from the brutal beast. And it finds no small share of its enjoyments in exercising those relations of mutual love and esteem, which alone can make home attractive and delightful, giving it a higher significance than a mere sleeping and eating place. But besides the home, the soul is deeply interest-

ed in the surrounding nature, uniting its various single beauties into one harmonious conception. It will not be asserted that our inward nature is not closely, mysteriously associated to outward nature; and especially to that part, which above all, adorns it as with a beautiful garment—the vegetable world. Home and nature are therefore two most important components to a happy and feeling man. If both are equally charming and dear to him, he will experience pleasures which money cannot buy, and sublunary troubles cannot take away.

The other branch of Horticulture, ornamental gardening, or the cultivation of the ascetic taste of man will lend great assistance to make the home attractive, while beautifying surrounding nature. It is therefore nearly related, yea, indispensably necessary to rural life. It has been denounced by many as utterly useless and senseless, especially for a practical country like ours, where the industrious farmer has no time to fool away on unremunerative flowers. We think such men are mistaking their true mission as farmers and as men. The farmer above all ought to have a spot consecrated to plants and flowers, (which are nearer associated to his inward man than corn and potatoes,) where he might spend a leisure hour with his family. Besides if he should have no room in his heart for such enjoyments, his wife and daughters surely have it, and for their sake he should do something to render his home beautiful.

It is true this branch of gardening has come to us in a pretending style. It assumes the character of an art—a fine art even, requiring a master spirit to carry it on. Coming from Europe to us, it has brought along much of needless European fancy and vain invention which is to be carefully separated from the true essence, before it can meet with the good will of the farmer, and before it can find its way to every humble cottage of the land.

Among all civilized nations, ornamental gardening has been practiced. Originating from the desire to beautify the homestead it has eagerly been taken up by the mighty of the earth to display their splendor and magnificence.—History tells us of many ancient and modern gardens of almost a mythic splendor. In Europe, the seat of the most civilized nations, it has been carried to its greatest glory. It might be well to mention briefly the two different styles which have prevailed there. The artificial or geometrical style was calculated to display only man's art and cunning in his garden. Every feature was calculated to contrast strongly from nature. All figures, trees,

and soon the gardeners fancy had to conform to geometrical proportions and laws, but within these they had unrestricted freedom. This ancient style, as it is often called, was superseded by the so called modern style of gardening. It is acknowledged that in nature we have to find all the truly beautiful, which man is able to imagine, and as but rarely all those perfect features are united in one spot, this style of gardening aimed to create such perfect scenes by art, strictly observing the patterns set by nature. It assumed the name of Landscape gardening, as being productive of Landscapes on a smaller compass. And here the question arises, should not the farmer, too, have his full share in the enjoyments of a charming landscape; should he not cultivate and nourish within his soul a love and respect for those thousand fold beauties which nature has spread out before his eyes; and should not this noble sentiment prompt him to employ every means to preserve the natural charms of his lordly dominion and to surround his homestead with a smiling scene, whose features are those of free and beautiful nature, heightened however, by a small effort of art, to show forth the privileges which the habitation of man is entitled to claim over scenes habited by birds of the air or beasts of the field?

If such be the standard by which the farmer measures and directs his improvements, he may be said to be a Landscape gardener, educated by good taste and guided by good sense. Arrayed with these weapons he may compare favorably with many of our professional, highly learned landscape gardeners, who coming from European parks and gardens, are ever ready to give us thrilling accounts of innumerable curiosities to be seen in Great Britain, France, or the German Fatherland, and who but too often have crippled American gardens to ridiculous copies or caricatures of European parks. Good taste will ever be an open door by which improvements and new beauteous scenes may be introduced, and joined to those which already exist, whilst good sense will prove a stronghold to rebuke such fancies and suggestions which are contrary to the wants, customs and the climate of our country.

We can also readily understand that the garden of the farmer will always contrast from the ornamental ground surrounding the suburban villa of the wealthy. In one we love to witness the charms of a peaceful and happy country home, in the other we are forcibly led to admire and envy the riches and splendors of one of our fellow citizens. Which of both enjoyments is the

most genial and agreeable? The reader may judge for himself.

Ornamental gardening when properly understood and wisely practiced, furnishes innumerable pleasures and enjoyments to every class of society. The more, however, it finds its way to the home and heart of the agriculturists who till the soil of this goodly land, the more it will fulfil its mission, which, in our opinion, is to bless and to elevate the millions, and not merely the few.

M. G. KEERN.

#### Locust Trees on Rail Roads.

The Illinois Central Rail Road company have contracted for the planting of Locust trees on each side of their road, for the distance of one hundred and twenty miles.

After the trees are once set, with a little care in keeping the weeds down and the earth mellow around the roots for two or three years, they will require no more labor and they will then afford shade along the road and will have a tendency to cause the grass to grow, which will in a great degree prevent much of the annoyance from dust, and at the end of twenty years the trees will afford timber large enough for ties use of the road.

This is a most excellent plan, and should be adopted on every road that runs through land that will grow the locust.

The laborers who repair the road can bestow the little cultivation necessary which will cost but a trifle.

#### PEACHES.

We understand there is an abundant crop of peaches in South-western Kentucky and Northern Tennessee, and also some portions of the Green River country. In those sections of the West and on the knobs of Salt River, peaches may be grown almost every year without a failure. The kinds usually grown are seedlings and of but little value in market, compared with the best cultivated varieties. If some enterprising persons living in these sections would plant the best kinds of the peach largely a little fortune could be made in seasons like the present when there is a general failure of the peach crop, which is usually two or three years out of five. There are many places suited to the growth of the peach, where the crop would be seldom cut off by the frost. Trees planted now will just be in good bearing by the time the contemplated Rail Roads are completed.

The pursuit of Horticulture has a tendency to refine and elevate the mind of man.



## The Home Circle.

### ESSAYS ON HEALTH—No. 1.

Man is fearfully, wonderfully, and healthfully made. Health is the natural result of his normal condition. The delicate and wonderful organs of his complex body are singularly adapted to each other. They work in a marvelous harmony to the one great end of their existence—the health and strength of the whole. The brain quickens the muscle; the muscle invigorates the brain; the stomach feeds the whole; the heart warms all; the skin protects and tempers the temperature of the model republic it bounds and encloses. The glands perform their official duties to all the rest,—sentinel answers to sentinel and herald to herald through the whole economy of forces, and each and every laboring organ joyfully fulfills its duty for the benevolent purpose of keeping the reciprocal confederacy well and happy. The arrangement as a whole, is perfect. With mechanical, even mathematical exactness and skill, each part supplies its place, performs its duty, measures its work. The natural human body is science in action. It is a combination of many sciences—an “*E pluribus unum*” of scientific applications. The wisdom and skill of the Divine Mind is physically demonstrated in the human frame, elaborating health and strength as its predetermined and benevolent result.

Not only are all its parts exactly adapted to each other, but they are adapted also to the supremacy and use of the mind that inhabits them, and the outward world in which the body lives. The body hangs pendulum-like, between two worlds, answering both to material and spiritual forces, swinging between matter and spirit. And yet, with its marvelous complication of forces and uses, both physical and mental, it is so perfectly made, so divinely arranged, that health is its constitutional condition.

#### DISEASED CONDITION.

The dual relation of the body to matter and mind, makes it more than a merely animal organism. Man is an animal and something more. That something more, adds a great additional weight and liability to disorder to his physical organism. An animal has only the physical world to answer to and physical laws to obey; and instinct usually leads to this obedience with sufficient correctness to secure general health. But man has all the animal conditions related to a spiritual existence, subjected to the rule of mind. Mind being superior to instinct, it de-

stroys the rule in relation to the body and assumes the direction of all its concerns. Thus the human body is undirected by instinct, and left wholly to the guidance of the mind that inhabits it. That mind in its ignorance, impulsiveness and ambition, leads it into a thousand excesses, abuses, violations of its organic laws, which breed diseases innumerable. Man in his primitive condition is without a knowledge of his structure and what is necessary to preserve his health. And it is too generally the case that he gains wisdom only by experience. In the animal, instinct will preserve his health; in man, wisdom and obedience to its dictates are necessary. The human organism takes on all the conditions that relate to mind, more than the animal organism possesses, and this renders it infinitely more liable to derangement and disorder. It subjects it to all the power and passions of mind, to all its ambitions and vicious desires, to its heedless, ignorant and intemperate impulses. Numerous indeed, then, are the causes of disease in the human organism.

Those writers and philosophers who have contended that man's health may be preserved as easily and perfectly as an animal's, have ignored his relations to mind and all the liabilities such relations bring, which are the chief ones to which man's health is exposed. \*

### ONE WANT OF THE AGE.

We need a metaphysician who can give us some plain, practical rules for the preservation of the health and harmony of the mind. Not such bewildering disquisitions as would drive to insanity any person of ordinary capacity, who should be so rash as to try to understand them—plenty we have of these—but sensible, intelligent directions for guiding the related faculties, and giving to each the highest cultivation consistent with the harmony of the whole. That we need such, our crowded insane hospitals will abundantly testify, but more painfully still, the disordered unequally-balanced minds and dispositions among those accounted sane. How many can each one number in the immediate circle of his acquaintances—for, since

—“No power the gift will give us,

To see ourselves as others see us,”

it will be necessary to look for examples, to the excitably nervous, the morbidly sensitive, the passionate, the rattle-brained, the careless thinkers, the one-idea'd, the absent-minded, the misanthropic! Then how recklessly is the mind tampered with?

Sad, indeed, are the proofs we constantly see of ignorance or disregard of physical laws;

but where shall we find the individual who would venture, even if dread of pain did not deter him, to dissect his hand in order to satisfy ever so eager a curiosity to study its formation, or to remove an important muscle or nerve, in order to observe the peculiarities of action in a limb when uncontrolled? Yet there are those who will deliberately strive to throw off the guiding force of reason, which concentrates all the faculties and unites them in harmonious action, that they may admire the curious results. See how far the imagination can soar when set free, and what marvels it will work. Should insanity with such be considered a dispensation of Providence? Will Science be likely to receive any benefit from such investigations, in which the reason is no longer the guide in the search after truth? It is no wonder we have so many insane theories and vagaries, when we first make insane the mind of which we seek to know its laws.

There are many more who carelessly or ignorantly waste the powers bestowed upon them, and who, if made clearly to see their proper use, might save much suffering to themselves and mischief to the world. The philanthropists of our age have done much towards reforming the erring, and alleviating the miseries of the unfortunate. There would be much less for those of the future to do, if they would but strike at the root of so many evils by preventing or remedying their causes, so often found in disordered minds and ill-regulated dispositions. Let the laws of our whole being be clearly and forcibly taught and explained, and that these laws are fixed and immutable, and the consequences of their infringement irrevocable. Let it be clearly shown that men cannot sin against either their mental or moral natures with impunity—that God does not work miracles to save them from the punishment of their transgressions, and the world would soon be more free from sin and its unfailing attendant, suffering.

A.

[Written for the Valley Farmer.]

## Children Love Nature.—No. 2.

I remember once in that beautiful home of my childhood, waking very early on a summer morning, when others were sleeping. I rose softly and glided out in the hall. I looked out from the porch, then from the verandah, and from the drawing room window. The house seemed strangely still and deserted. I had never seen anything so beautiful as the scene viewed from between the porch pillars. On blade and leaf and flower, great dew-drops and little dew-drops

glistened in the early sunlight. A choir of joyous musicians filled the air with melody.—Strange romantic feelings gathered in my young brain and swelled my heart. I had an irresistible desire to give form and expression to the sentiment that awakened within me. How could I celebrate the loveliness around me in a fitting manner?

Though once familiar with, and loving the beauties which I then observed, wondered at and partially understood, they can never strike me as they then did—seemingly for the first time. Everything without was ineffably lovely and seemed to coax me thither. Yes! a walk in the garden I must take. But could I put on my every-day dress, when all so gala-like seemed everything on which my eyes rested? My tho'ts seemed in harmony with nature, and my dress must comport in *beauty* too.

I went to my room where were arranged my effects. I brought out an old white dress, quite too small for me. The short, narrow skirt terminated with two flounces, and the sleeves were puffed and to be looped with ribbons. I crowded my feet into a pair of fancy slippers, and with all the other appurtenances necessary to complete my attire, slipped down the dining-room stairs and out in the kitchen. Polly stood before the machine, turning the windlass, working biscuit for breakfast. Putting her great ebony arms akimbo, she ejaculated, “loz-a-massy me! Miss Ellie, whar’s you gwyne?” “I’m going walking, Polly. Fasten my frock, quick, quick, or it will be too late!”

With flowers stuck around my slide, in the loops of my sleeves, the bows of my shoes, and in my sash and in my hands, I demurely walked up and down the paths. Gazing above, below and around me, I evolved strange things in my childish brain, and weaved bright visions with a fancifulness which I shouldn’t blush to own in later days. The fresh sparkle of those first impressions of Nature’s loveliness in the early dewy morn, can never be quite equalled in my estimation.

Turning suddenly, I discovered papa and mamma in the door-way. Mamma spoke reprovingly, when she saw me quite wet with the heavy dew. I fancy I now see the merry twinkle of my father’s grey eyes and the drawn-down corners of his mouth, as with a low, short laugh he turned from the door, and left me to make myself presentable at the breakfast table.

There’s a pleasure tinged with sadness in thus recalling the past.

But, mothers! is it mere self gratification that leads to the indulgence? With the burden and

care of our noon-day work resting upon us, are we not too apt, all absorbed in our present duties, to *forget* our childish pleasures and reveries? To feel that they were mere idle fantasies and unrealities, to be thrown aside with toys and dolls? So forgetting or so feeling, fail we not to know our children as we ought? Those fancies and joys were as tangible realities *then* as are the thoughts and activities of later life. Perchance therein was more of nature and beauty than our noon-day sun shines upon.

To be a mother, with all a mother's tenderness and with all that becometh the guiding hand of a mother, we *must* live over our young years—reinvest ourselves with its dreams, hopes, aspirations and loved occupations. Do it for the better appreciation of the inner life of our little ones. So get at their young thoughts and draw them out with affectionate encouragement. Repress not youthful vivacity and exuberance of feeling and fancy. Shall our children look to us as mere natural protectors, careful and austere though provident guardians,—or rather loved as genial companions?

Ah, how much we lose ourselves; how coldly unsympathizing we seem to our children, when apparently callous or indifferent to the trifles making up their lives, which cause the blood to bound joyously in their young veins and heart-throbs to quicken with pleasure.

Care free and unguardedly, with the warmth of young life and youthful zest, they throw their whole being into the joys of the present. It is *ours* to guide this enthusiasm in proper channels—not to check it and turn it back to feed upon their young hearts.

WAUKESHA, Wis.

ELSIE.

### INSECT MUSIC.

The birds are not all of Nature's choir. It is not the feathered tribes alone that sing in the woods and fields praises to their Creator.

Day does not wake up silently, but the birds do not sing her earliest morning hymn. At the magic hour, before night has yielded up her sceptre, but when aurora, her rosy fingers, pale with shadows, is trying to open the gates of day, her soft approach is heralded by myriads of winged things, blending their tuneful melodies with the gentle murmur of leaves, which waking stir themselves, and of flowers, beginning softly to unfold their petals. The grasshoppers call out to each other. The cricket, ever near, chirps gleefully. The little tree-toad pipes his shrill note, and presently the insect world is wide awake, with numberless little voices blending to form accompaniments. All

the long summer's day they mingle their ceaseless hum with the rustling leaves and whispering wind. The tireless cricket still chirps. The locust trills his chattering song, and the Katydid repeats in concert the oft told tales.

It is only in the garden, the fields or the forest, we can study insect life. The naturalist may fill his cabinet with their pierced bodies, and study their forms and colors, but he knows them not until he has followed them to their haunts amid the blades of grass, beneath the leaves or in the drooping cups of flowers.

If some other Audubon would do for the insect world what he did for the animal, what beautiful pictures we might have; perchance of a Lilliputian family dwelling in the fragrant shelter of a rose leaf. "Imagination might fondly stoop to trace the magic splendors of the pictured place" and our hearts find fresh cause for thankfulness to the Creator, whose works furnish us with ever new and delightful themes for study, while we learn from them lessons of usefulness and goodness.

A.

### [Written for the Valley Farmer.] TO THE FARMER.

[Suggested on visiting the site of an ancient Indian encampment.]

Swart monarch of the teaming soil,  
The wilderness beneath thy toil  
Now blossoms like the rose.  
Where the wild Indian's wigwam stood  
When he was monarch of the wood,  
Thy golden harvest grows!

Prince of the Plow, thy broad domain,  
Of waving grass and yellow grain,  
Was the free hunting ground  
Of the red warrior of the wood,  
And they have watered it with their blood—  
O spare the humble mound!

Let the unsmitten pine which stands  
In lonely grandeur on thy lands,  
A shaft above their grave,  
Remain unharmed by axe or plow—  
Long as the sun shall bronze thy brow  
Let its green branches wave.

The wood-flower growing at its foot,  
The epitaph which nature wrote  
In angel alphabet—  
Go read it each returning year—  
Bedew it with an honest tear—  
We owe the race that debt.

Then God will send his rain and dew  
And sunshine on the fields for you;  
And the white wing of peace  
Shall guard thee from the ills of life,  
And shield thee in the battle's strife  
Until thy heart-pulse cease.

G. W. B.

## Editor's Table.

### Lectures on Agriculture.

NORMAN J. COLMAN, Editor of the *Valley Farmer*, will address his fellow citizens on the subject of AGRICULTURE, at the following times and places, viz :

St. Charles,	Thursday,	Aug.	21
Cottleville,	Friday,	"	22
Flint Hill,	Saturday,	"	23
Troy,	Monday,	"	25
Auburn,	Tuesday,	"	26
Prairieville,	Wednesday,	"	27
Louisville,	Thursday,	"	28
Bowling Green,	Friday,	"	29
Louisiana,	Saturday,	"	30
Frankfort,	Monday,	Sept.	1
New London,	Tuesday,	"	2
Hydesburg,	Wednesday,	"	3
Hannibal,	Thursday,	"	4
Palmyra,	Friday,	"	5
Warren,	Saturday,	"	6
Shelbyville,	Monday,	"	8
Sharpsburg,	Tuesday,	"	9
Somerses,	Wednesday,	"	10
Paris,	Thursday,	"	11
Long Branch,	Friday,	"	12
Mexico,	Saturday,	"	13
Shamrock,	Monday,	"	15
Danville,	Tuesday,	"	16
Warrenton,	Wednesday,	"	17
Naylor's Store,	Thursday,	"	18

Speaking will commence at 2 o'clock, P. M.

Ladies and Gentlemen are respectfully invited to attend.

### OUR APPOINTMENTS.

It will be seen by the above list of appointments that we propose to address our subscribers and others interested in Agriculture, in the counties of St. Charles, Lincoln, Pike, Ralls, Marion, Shelby, Monroe, Audrain, Montgomery and Warren.

We shall be happy to meet our subscribers at the various appointments and hope they will be instrumental in securing for us large audiences.

**TO STOCK GROWERS.**—We propose to publish in the *Valley Farmer*, the pedigrees and cuts of any animals furnished to us by their owners, provided such parsons are subscribers to the *Valley Farmer*. There is now a great spirit of improvement among our Missouri farmers. Some of the first stock in Kentucky is coming into the State. The circulation of the *Valley Farmer* numbers many thousands of the most enterprising farmers in Missouri, and this mode of giving publicity to improved stock will not only be interesting to our readers, but profitable to breeders.

### PREMIUMS FOR THE BEST CONDUCTED FARMS.

We have before us the list of premiums to be awarded at the first annual fair of the Kentucky State Agricultural Society, and also lists of premiums to be awarded at the 1st annual Fair of the St. Louis county Agricultural and Mechanical Association, together with the premium lists of several other prominent Agricultural and Mechanical Associations in Kentucky. These associations all offer most liberal premiums on all classes of stock, farm products, and almost every variety of manufactured articles; and the two first named have offered premiums for the best essays on breeding all kinds of farm stock and on almost every variety of farm crops, including the orchard, forest, &c., but in none of them do we find premiums offered for the best *managed farms*.

This is one of the most important measures that should occupy the attention of our State and county Societies. A farmer may, by chance, or even by well directed labor grow a good crop of corn, wheat or hemp, and still be a loose, careless farmer. But to farm profitably, a well established and well directed system of farm management must be maintained, and that this may become general and contribute to the happiness of the farmers, and increase the wealth and prosperity of the country, we regard it as one of the considerations that should not be overlooked by these societies. We presume this is an oversight, or we should now find in every premium list, handsome rewards offered by the various State and county societies for the best conducted farms. This custom we believe universally prevails with the older established societies in the country. Premiums are offered and a committee is appointed who visits the various farms entered for premiums, during the season, and make their reports at the winter meeting of the society.

We hope the several societies will bear this subject in mind at their meetings for next year.

**TO POST MASTERS AND SUBSCRIBERS.**—We frequently receive complaints from our subscribers in various parts of Kentucky and Tennessee, more particularly from the country post offices, that the *Valley Farmer* fails to come to hand, sometimes two numbers in succession.—Who is at fault in this matter we are at a loss to say. We can assure our subscribers however that the paper is regularly mailed to each of them so as to reach their post offices always by the 3rd to the 6th of every month. The fault lies with some of the government officers. We hope they will correct it.



**POTATO FLY—CANTHARIS VITTATA.**—This insect has been unusually destructive to the potato crop in many parts of the country the present season. We have seen in the papers frequent inquiries as to what it is, and whether there is any effectual way of checking its ravages in the fields and gardens.

It is an insect that frequently attacks potatoes, tomatoes, beets, &c., in dry seasons. It is known under the name of *Cantharis Vittata*. In medical practice it is found equal to the Spanish fly in all its properties. In this respect it was noticed in a memoir by Dr. Isaac Chapman of Bucks county, Penn., in the New York Medical Repository in 1805. During the war of 1812, Spanish flies rose to an extravagant price, and at length could not be had at all, in some parts of the country. This emergency led to the extensive use of the *Potato fly*, above named in the Eastern hospitals, dispensaries, and in private practice.

The fly is about three quarters of an inch long, black, with a white stripe on each wing. It is a voracious eater and when it appears in large numbers as we have seen it in several parts of Kentucky and Missouri the present season it will devour the leaves from a whole field of potatoes in a few days.

**Remedy.**—As soon as they make their appearance sprinkle air-slacked lime on the plants, in the morning while the dew is on. It is also said that merely going over the field and giving the vines a slight shaking with a stick or pole they will readily fall to the ground and never rise to the plant again. We have never seen this remedy tried, but have no doubt but it will be found effectual, as the insect from over-eating is exceedingly clumsy and inactive.

**NELSON COUNTY, KY., AGRICULTURAL AND MECHANICAL ASSOCIATION.**—We have received a list of the premiums to be awarded at this fair, which is to commence on the 21st of Oct., and will continue four days. The premiums are liberal, embracing not only stock, but articles of ladies' manufacture, carriages and harness, cabinet work, leather and shoes, farming implements, fruits, vegetables, poultry and the products of the dairy.

**ADDRESS OF THO. L. ANDERSON, ESQ.**—We have received the address of Thos. L. Anderson, Esq., delivered before the Marion, (Mo.) Agricultural and Mechanical Association, at Palmyra, in October last. It is an able address and we shall endeavor to find room for some extracts from it, for the benefit of our readers.

### STEAM PLOW.

May we expect to substitute steam for horses in plowing, turning over five or ten acres in a day ten or twelve inches deep? Yes if we can only overcome the effects of the great weight of the locomotive upon the soft earth.

Adopt the suggestion of Mr. Bronson Murray, of Ill., and we venture at least that in three years you will see new prairies broken up successfully by steam. We proposed in a late number of the Valley Farmer that the hemp growers of Kentucky and Missouri offer a premium of \$16,000 or \$20,000 to the inventors of machines that would successfully cut hemp in the field and also break and dress it.

Mr. Murray proposes that the sum of \$50,000 be raised by subscription and offered as a premium to the inventor of a successful steam plow for the use of prairies, and agrees to subscribe \$500 himself.

We hope such a plan is now already at work. A friend of ours, (who wishes his name withheld) passed up the Missouri river a few days since, with all his machinery for breaking the prairies by steam. His engine was built by Obed Hussey, of Baltimore, Md., the inventor of the Reaping Machine.

**COUNTY FAIRS IN 1856.**—In our August number we gave a list of State and County fairs to take place the coming fall, as far as we had been informed of the time and place of holding them.

In requesting our friends in Kentucky and Missouri to send us premium lists of the county fairs to be held in these States, we did not intend to confine the publication to these States alone, but would be glad to receive copies of the premium lists of every agricultural society in the West, so far as the Valley Farmer circulates, that we may publish the time and place of holding the Fairs.

**C. B. SWASEY & CO., NURSERYMEN, YAZOO CITY, MISS.**—Our printers, by some mistake, last month, transferred our friends, C. B. Swasey & Co., and their extensive Nurseries to Taylorsville, Miss. We presume they won't like the change, so we, like a magician, will reinstate them on their old grounds, at Yazoo City, Miss. Those who have apple seedlings and apple seeds for sale are referred to their advertisement.

The Messrs Swasey have also informed us that they wish to employ a foreman in their nurseries. A married man with a small family would be preferred. The best qualifications will be necessary to secure the situation.

### The Temperance Manual.

By B. H. MILLS, G. W. S. of Mo. I. O. G. T. Published by Edwards & Bushnell, St. Louis, Mo.

This is a Western book, by a Western man, published by a Western publishing house, and in mechanical execution can hardly be surpassed. It contains a history of the Order of Good Templars, by D. W. Bristol, P. G. W. C. T. a history of the Sons of Temperance, Temple of Honor, Prohibition, Funeral Ceremonies of the Order of Good Templars, a choice collection of temperance songs, &c. Price, cloth, 50 cents, extra gilt, 75 cents. The work embraces in a small compass a mass of facts, not easy attainable, and should be in the hands of every family.

PROGRESSIVE FARMER.—Our thanks are due to some unknown friend for a Volume of this work which has come to us through the mail.—The work is now united with the *Farm Journal* an excellent monthly periodical of 32 pages, published at Philadelphia, Pa., by Samuel Emlen & Co., at \$1 a year or 5 copies for \$4.

CLOD CRUSHER WANTED.—M. B. Bateham, Esq., of Columbus Ohio, republishes in the Ohio Cultivator a cut and description of the English clod crusher, and remarks that "one of Crosskill's best machines was sold in New York, at the close of the exhibition in the Crystal Palace in 1854. Can any of our exchanges inform us who was the purchaser, or where the machine is now?"

We are unable to answer our friends inquiry but if we could, we very much doubt whether the purchaser of the machine, if he has tried it would be willing to part with it for twice the sum he paid for it.

We have for some time delayed the publication of an article showing the advantages of the use of the roller and clod crusher, mode of building, &c., until we could procure some cuts illustrative of the different kinds in use. We hope to be able to do this soon. In the meantime, for the information of Mr. Bateham and the rest of mankind, (for every farmer, at least, should have a clod crusher,) we will state that they are made at Geneva, N. Y., by Thos. D. Burrall, Esq., and at Baltimore, Md., by Messrs. R. Sinclair & Co., of either of whom we presume a section of the crusher and other necessary castings could be obtained for patterns, when the work of building could be executed in any country foundry and machine shop.

### The Valley Farmer A Monthly.

EDS. VALLEY FARMER—GENTS:—I am glad you have determined not to change the Valley Farmer into a weekly or semi-monthly paper.—There are many who want a paper only for present use, but I take the ground that any paper that is worth having is worth preserving, and should be in such form that it can be bound.—We have the news, politics and trash of the day in abundance, but little of which is really worth reading and still less worth preserving. Your paper is truly valuable and should be in every house in the country. There is no man so poor that he cannot afford to have it. I have not yet seen a single number that was not worth the years subscription. Very Respectfully,

GEO. LYMAN.

New Albany, Aug. 4th, 1856.

Our correspondent has our thanks for the good opinion he has expressed of the Valley Farmer. We will endeavor to continue to merit it. We are gratified to learn that there are among our subscribers many others who concur with him and us in believing that the work, in its present form and period of publication, is more valuable than it could be if changed to any other. It is the substance and not the shadow we want.

SAINT LOUIS AGRICULTURAL AND MECHANICAL ASSOCIATION—FAIR POSTPONED.—At a recent meeting of the Board of Directors of this Association it was determined to postpone the Fair. It will now be held, commencing Monday, Oct. 13th, and continue five days. It was thought that this would be a more suitable time, and would better enable the owners of stock from a distance to be present. We hope the postponement will give satisfaction and that there will be such a crowd of people present as have never before been congregated at one place in the Mississippi Valley.

G. M. KERN.—We have the promise of an occasional communication from the pen of this gentleman, one of which appears in this number. Mr. Kern is a practical landscape gardener, and is at present in charge of the Botanical Garden at Farmer's College, College Hill, Ohio. He is the author of a work on Landscape Gardening, published in 1855, and is a regular contributor on horticultural subjects, to some of the leading periodicals of the day. Mr. Kern is a German by birth and education, and when it is considered that his entire knowledge of the Eng-

lish language has been acquired within the space of six years we must admit that he writes with a fluency and correctness rarely surpassed by one in our own vernacular.

### STORING POTATOES.

In the August number of the Valley Farmer we gave the plan of building a cheap potato house, one that has been proved to be everything that could be desired for that purpose.

In looking over the transactions of the New York State Agricultural Society for 1850, we find an able article by Gardener Cox, of St. Lawrence Co., N. Y., on the subject of the *Potato Disease*, in which he gives his experience for four years in keeping potatoes with the most perfect success. His plan embraces all the principles laid down in our article, although his house is partly under ground which may be the more necessary in the cold climate of the State of New York. Mr. Cox says: "My experience is this. In the summer of 1846, I erected a cellar sufficiently large to hold eight thousand bushels of potatoes, and stored that fall seven thousand and averaging about eight feet deep. The cellar was built upon the North side of a hill sufficiently high to admit of two ventilations, to enter beneath the floor of the cellar, timbers were laid crossways upon the bottom of the cellars and boards laid upon them about 8 inches wide and one inch apart, admitting the cold fresh air to circulate under the whole body of the potatoes. The result has been that my stock has been preserved. No chemical action has been discovered to work the work of decay. Potatoes which were diseased when stored, have been arrested from further decay, and the diseased part of the potato dried down and the sound part preserved."

We are anxious to see the old primitive method of burying potaees in the ground abandoned.

**HESSIAN FLY.**—A writer in the *Southern Farmer* states that previous to the ripening of his grain, he observed great numbers of the Hessian fly, sporting from plant to plant all over the field and thinks the eggs of the insect must be deposited by the fly in the soft, unripe grain.

The *wheat midge* deposits its eggs in the head or germ of the grain and the young insect is sustained on the milk of the wheat, and the flies alluded to by this writer no doubt were the wheat midge, which in the winged state very much resembles the Hessian fly.

The Hessian fly deposits its eggs in the growing grain and the young insect may be found in the sheath between the blades and the main

stem of the plant, near the surface of the ground. It here lives on the juices of the plant and in the course of six weeks it reaches maturity and then passes into a dormant state and assumes much the appearance and color of a flax seed. Wheat thus infested changes to a yellow, sickly color, and at this time the insects are readily discovered by examining as we have stated.

### THE HONEY BEE.

We have received the following note, and hope Mr. Quimby will find time to comply with the wishes of T. H. We know Mr. Quimby to be one of the best informed men on the subject of the Honey Bee, in America.

MESSES. EDITORS.—I was much pleased with an article on the subject of "Bees," in the July number of the Valley Farmer, from Mr. Quimby. I would be greatly obliged to him, and I know your other readers would also, if he would give a description of the hive he uses, and also of the glass boxes and the method of making them, in which he sends his honey to market.

T. H.

EDS. V. F:—Can any of your subscribers give me some information about the average growth of timber per acre by the cubic foot or cord of wood according the age, situation of the timber and the kinds of trees, whether they are oak, hickory maple, &c. Or is there any book on the Sylviculture in this country, where I can get the information wanted.

Yours most faithfully, H. KOPLY.

Highland, Madison Co., July, 1856.

Can any of our farmers give through the Valley Farmer the desired information.

☞ We are indebted to James Adams, Esq., Secretary of the State Agricultural Society of New Hampshire, for a copy of the transactions of the society for the year 1854. It is an interesting and valuable work.

TRANSACTIONS OF THE ILLINOIS STATE AGRICULTURAL SOCIETY, Vol. 1, 1853—54.—We are indebted to our friend, Dr. John A. Kennicott, Corresponding Secretary of the Society, for a copy of this work. It is a neat volume of upwards of 600 pages of admirably arranged and valuable matter, and affords the most gratifying evidence of the prosperity and rapid progress the youthful State of Illinois is making in agriculture, the true basis of State and national prosperity.

## State Shows, 1856.

New Jersey .....	Newark .....	September 9 to 12.
Vermont .....	Burlington .....	September 9 to 12.
Canada East .....	Three Rivers .....	September 16 to 18.
Virginia .....	Wheeling Island .....	September 17 to 19.
Ohio .....	Cleveland .....	Sept. 23, 24, 25, 26.
Canada West .....	Kingston .....	September 23 to 26.
Am. Pom. Soc. ....	Rochester .....	September 24 to 30.
Michigan .....	Detroit .....	Sept. 30 to Oct. 3.
New York .....	Watertown .....	Sept. 30 to Oct. 3.
Illinois .....	Alton .....	Sept. 30 to Oct. 3.
Pennsylvania .....	Pittsburg .....	Sept. 30 to Oct. 2.
Kentucky .....	Paris .....	Sept. 30 to Oct. 5.
National Ag. Show ..	Philadelphia ..	October 7.
California .....	San Jose .....	October 7 to 9.
Wisconsin .....	Milwaukee .....	October 8 to 10.
New Hampshire .....	San Jose .....	October 8 to 10.
Iowa .....	Muscatine .....	October 8 to 10.
North Carolina .....	Raleigh .....	October 14 to 17.
Georgia .....	Atlanta .....	October 20 to 25.
Indiana .....	Indianapolis .....	October 20 to 25.
Maine .....	Portland .....	October 28 to 30.
Alabama .....	Montgomery .....	November 11 to 14.
Missouri .....	Boonville .....	October 6.

## COUNTY OR LOCAL FAIRS IN KENTUCKY.

Kentucky Agr. and Mech. ....	Lexington, Sept. 9 to 12.
Logan County Agr. Soc. ....	Russellville, Oct. 1 to 3.
Union Agr. and Mech. Assoc. ....	Eminence, Oct. 7 to 10.
Northern Kentuck, Florence, Oct. 7 to 11.	
Southwestern Agr. and Mech. Assoc. ....	Louisville, October 14 to 18.
Henderson, Hopkins and Union Scientific, Horticultural Agricultural & Mechanical Assoc. ....	Henderson, Oct. 14-16.
Nelson Co., Agr. & Mech. Assoc. ....	Beardstown, Oct. 21-24.

## FAIRS IN MISSOURI.

St. Louis Agr. and Mech. Assoc. ....	St. Louis, October 13 to 18.
Southwestern Agr. Soc. ....	Springfield, Oct. 1.
Central Mo. District Agr. Soc. ....	Boonville, Oct. 6 to 10.
North-western District, St. Joseph, Oct. 21 to 24.	
South-east Agr. Soc. ....	Jackson, Oct. 16 to 18.
Jackson county Association, Independence, Oct. 7 to 11.	
Ray County Agr. Society, Richmond, Sept. 23 to 26.	
Callaway, do do	Sept. 23 to 26.
Boone, do do	Sept. 30 to Oct. 3.
Cass, do do	Pleasant Hill, Sept. 23 to 26.
Pettis Co. Agr. Mech. Soc. ....	Georgetown, Sept. 30 to Oct. 1.
Washington and Orange Agricultural Society, Livonia, Indian, Oct. 1 to 3.	

N. B. There are many more fairs to be held in Missouri and Kentucky, the present season, but we have not been advised of the time of holding them. We shall be pleased to make the list complete if the friends interested will inform us on the subject.

## FARM PRODUCT MARKETS.

## ST. LOUIS MARKET.

ST. LOUIS, Aug. 16, 1856.

Flour—\$6 50@ \$6 00.	
Grain—Wheat ranges from \$1 10 to \$1 15, as to quality;	
Corn —@52c; Oats 48c; Barley in demand and ranging	
from \$1 40 to \$1 50 as to quality; Rye 65c; Beans \$2.	
Dried Fruit.—Dried apples range from \$1 10 to \$—	
Peaches \$2@2 25 ¢ bushel.	
Seed—Flax firm at \$1 60; Clover \$8 50 to \$9 ¢ bbl;	
Timothy \$2 50@ \$3 00.	

## LOUISVILLE MARKET.

LOUISVILLE, Aug. 15, 1856

Flour—Superfine in lots \$5 75@ \$6 00; retail \$6 ¢ bbl.	
Grain—Wheat \$1 10. Corn 50¢@55c. Oats 40¢@45c.	
Rye 55 cents ¢ bushel.	
Fruit.—Dried apples \$1 00@ \$1 25. Dried peaches	
\$1 50@ \$1 75. Green apples \$2@ \$3.	
Seeds—Hemp \$1 25; Orchard and Herd \$2 00; stripped	
Blue grass 90¢@ \$1 00, clean \$1 50; Timothy \$3 50 ¢	
bushel; Clover \$8 50@ \$9 50 ¢ bushel.	
Beeswax—\$3 20 to \$3 30 gross; Sheep \$2 to \$3 ¢ head;	
Hogs 4@5c gross.	

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## DURHAM CATTLE.

OVER twenty years' careful breeding has enabled me to accumulate a large herd of cows of this valuable breed, whose ancestry, as well as themselves, have been proven to be fine MILKERS, FEEDERS and BREEDERS; special attention having been always bestowed on the first and the most valuable quality.

The BEST BULLS within my reach have always been used, and I now have the progeny, among others, of Goldfinder, John O'Gaunt, Fusileer, Lord John, Orontes, and Senator Second, all imported. I have quite a variety for sale, among which are four fine yearling bulls, and several two year old and yearling heifers.

## Fine Hogs.

Having been long in the habit of raising and fattening from one hundred to two hundred hogs annually, I have diligently sought for the breeds which are best adapted to all the circumstances of a Kentucky farmer. My lot of breeding sows consists at present of some which are a cross of Woburn and Irish; others which crossed with imported white Berkshire; one out of an imported Yorkshire sow, and several which are out of a Woburn and Irish sow, which sold at \$106 at public sale.

Out of these sows I now have a fine lot of pigs, (ready for sale, and which I can recommend,) by a boar of Woburn and Irish cross, which took premiums at the Fairs at Paris, Lexington and Louisville.

## Improved "Kentucky Sheep."

This is a new variety adapted especially to the West and South, by over eighteen years careful crossing with the best bucks (chiefly imported) of the Saxony, Bakewell, Southdown and Cotswold breeds.

The sheep are large, thrifty, healthful and prolific; need but little care, no housing, and no feed winter or summer, but blue grass or other pasture. They have heavy fleeces of long, thick, soft wool of medium fineness, and their mutton is not inferior to that of any other breed.

The bucks uniformly effect great improvement in the common flocks of the country. I have a fine lot of lambs and yearlings of both sexes for sale.

Animals to be sent to the South or West will be carefully haltered, or put in boxes or crates, and be supplied with proper feed for the trip, and put in the railroad cars in Frankfort free of extra cost. Of a great number of all kinds sent to the South and West, to the care of commission merchants alone, but two or three only have been lost, and they were replaced, though all shipments are made at the risk and expense of the purchaser.

Remittances may be made on banks, or on city merchants without risk or discount. Those who wish to buy are invited to call and examine my stock, or to address me by letter at Frankfort, Ky. ROBERT W. SCOTT.